SHANGHAI—China's banking regulator issued a stern warning to banks to strictly comply with capital requirements or face sanctions, the clearest sign yet Beijing is worried about possible risks building in the country's financial system after a year of blow-out lending.

Banks that fail to comply by the end of the year with capital adequacy requirements—the amount of capital they must hold against their loans—could be punished with limits on market access, overseas investments and new branches, the China Banking Regulatory Commission said in a statement on its Web site. Such sanctions already exist, but have rarely been enforced.

New loans in the first half of this year totaled 7.37 trillion yuan ($1.079 trillion), equivalent to half of the country's gross domestic product over the period, as the government turned to bank lending to power its economic stimulus plans.

There are fears that the lending binge could saddle banks with large amounts of non-performing loans, reversing some of the gains achieved over the past decade of financial reforms that were aimed at turning China's state banks into commercial lenders better able to manage risk.

The tough statement indicates that Beijing is ready to more actively tighten the credit growth that has been the linchpin of China's economic recovery. Higher capital requirements act as a constraint on lending, as banks would need to raise additional money before they could make more loans.

The capital adequacy requirement was raised to 10% from 8% at the end of last year. At the same time, banks were ordered to set aside credit provisions equivalent to at least 150% of their bad loans. More recently, the CBRC reduced the amount of subordinated bonds—debt that has a lower priority than other claims on an asset, and has higher returns— that banks could count toward their capital requirements. This was after it became apparent that banks were using the debt to lend money to each other, raising the risk that a default could ripple through the entire system.

A spokesman for China Construction Bank Corp, one of the Big Four state lenders, said the banking regulator "is considering imposing stricter capital requirements for lenders" next year, and the bank is closely monitoring the situation. Hu Changmiao said his bank "isn't yet sure" whether the CBRC will decide to raise its capital requirement and if so, by how much, because the regulator "hasn't issued any written notices."

A CBRC spokesman said there "won't be any sudden changes" in banks' capital requirements. He denied a media report saying the regulator will require major state-owned banks to have a capital adequacy ratio of 13% from next year.

The spokesman said capital ratios are decided in a "counter-cyclical" way to address "systemic risks," language that indicates Beijing sees these regulatory requirements as one way to cool down a lending boom if it threatens economic stability.

In the past, Chinese authorities have curbed overheated lending by imposing sweeping credit quotas. This time, they appear to be adopting a more market-oriented approach, while being prepared to use ad hoc administrative measures as necessary.

Last week, the regulator issued verbal instructions to a mid-sized Chinese state lender that it must limit outstanding loans for the last two months of the year to its level at the end of October, according to an internal bank memo shown to Dow Jones Newswires by a bank executive on the condition that his employer not be identified. The regulator denied issuing such a notice.

No other banks seem to have been similar instructed. But medium-sized banks in particular have had trouble maintaining their required capital levels and loan-to-deposit limits, having been especially aggressive in using the stimulus boost to grant more loans and expand their market share. Beijing may be tempted to again directly cap some of their lending limits rather than hope they will adjust their loan portfolio to meet the requirements.

In its statement on Monday, the CBRC said it doesn't plan to impose any controls on the size of bank loans. It also said it aims to promote a stable and continued growth in bank lending, and prevent "big swings" in lending.

Lending curbs were last imposed at the end of 2007 to cool an overheating economy, and were lifted in October 2008 with the onset of the global financial crisis.

There is little likelihood that loan limits might be rolled out to the entire banking system. Although China is growing faster than any major economy, a sudden pullback in bank lending could shake the country's recovery.

A greater concern for Beijing is likely to be the fallout in two or three years if banks discover that many of their loans won't be repaid. China's last efforts to rid the financial system of non-performing loans five years ago cost the country hundreds of billions of dollars, and the experience is still fresh in regulators' minds.

Bank lending has slowed somewhat over the last month, with banks extending 253 billion yuan of new yuan loans in October, the lowest level so far this year and less than half of September's amount.

Fitch Ratings analyst Wen Chunling says the banking regulator faces a dilemma. "On the one hand it wants to alert banks over risks. But on the other hand it wants to avoid scaring people with too strong alerts," she said.