Buying into China's Volatility

Michael Pettis

Instituto de Estudos Avançados da Universidade de São Paulo

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In November during a banking conference in Beijing, a senior manager from Bank of China noted humorously that his bank, whose recent IPO had been priced at just over three times book value and had since traded up to 3.4 times, had a significantly higher valuation than the conference's host, HSBC, which was trading at roughly 2.1 times book value. Critics of China's banking reform who continue to complain about bad loans, he suggested, might be missing the point. The market's assessment was clear: Chinese banks are healthy enough for markets to assign very high values to their shares.

At first glance his suggestion seems reasonable. Share prices have informational content, after all, and market valuations must reflect real investor perceptions. Two weeks earlier the biggest public offering in history, the $22 billion IPO by the Industrial and Commercial Bank of China (ICBC), had been by almost any standard a success. Not only was the offering oversubscribed approximately 50 times, but immediately after its launch its share price surged 15%. Like other wildly successful recent Chinese bank IPOs, including those of the China Construction Bank and Bank of China, the ICBC transaction seemed to confirm that international stock markets love Chinese banks.

Markets process many kinds of information, however, and because shares in Chinese banks and shares in global banks represent different kinds of claims, it is a mistake to assume that their informational content is the same. On the contrary, whereas the share price performance of Citibank or HSBC may say a great deal about investors' assessment of their loan and earnings quality, it says something very different in the case of Chinese banks.

This is because shares of companies with dramatically different levels of solvency trade on very different types of information, and while there have certainly been improvements in lending practices in recent years, Chinese banks have a long way to go before they are healthy and can be considered prudently managed. If nonperforming loans and other assets were valued correctly, these banks would be technically insolvent. In a November 2006 report, Fitch Ratings estimated the total amount of nonperforming loans in

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[**] Michael Pettis is a professor of international finance at Tsinghua University and the author of *Is China Vulnerable? The Causes and Consequences of Financial Fragility* (Tsinghua University Press, June 2003). Chang Hui, a graduate student at the school, assisted in preparing data.

the system, and calculated, assuming a 30% recovery rate on nonperforming loans (though on average the recovery rate for Chinese banks has been closer to 20%), total unrealized losses in the banking system to be roughly $250 billion, which exceeds total capital and reserves by more than one-third.

This figure does not include estimates made for the rapid loan expansion of the past two years, with loans growing 10.2% in just the first half of 2006. Most analysts believe this breakneck growth will result in a surge in new nonperforming loans. Fitch's figures also do not include another $300 billion in loan carve-outs by asset management companies, who paid for the loans with low-coupon bonds which, if marked to market, would involve a further write-down of 10-15%. After taking into account these adjustments, liabilities materially exceed the true value of assets for every major bank in China.

OPTIONALITY IN EQUITY PRICES

Because they are technically insolvent, the informational content of share prices for Chinese banks is different than for solvent global banks. High valuations normally indicate expectations of low volatility and smooth sailing ahead, but share prices can measure a number of things, and in fact under certain circumstances rising share prices may indicate more, not less, expected volatility. This is the case for Chinese banks, whose market valuations reflect a very strong component of optionality in the share price.

One useful way of understanding the valuation of equity shares is by comparing them to call options and decomposing their value. As is widely recognized, equity has a relationship to the operating assets of a company that is similar to the relationship between a call option and its underlying asset. Options are defined in part by their strike price. In the case of equity, the corresponding strike price is equal to the total liabilities of the company. This is because equity holders "own" whatever is left after all liabilities have been paid, just as owners of call options "own" the value of an asset above the strike price.

A call option has intrinsic value when the value of the underlying asset exceeds the strike price. Similarly, when a company is solvent – i.e. the market value of a company's assets exceeds its liabilities – the company's shares have intrinsic value equal to the difference between the two. If all assets and liabilities were recorded at their true market value, intrinsic value would be equal to a company's book value. Since this is almost never the case, intrinsic value can be significantly more or less than book value. Only solvent companies have intrinsic value, and the greater the value of assets relative to liabilities, the more intrinsic value there is in the share price. For highly solvent companies, intrinsic value comprises by far the largest component of share price.

But intrinsic value does not fully explain share price. In the same way that the value of a call option must always exceed its intrinsic value, the value of a share is also always greater than its intrinsic value. The most important reason for this is that equity shareholders have limited exposure to a drop in asset value and unlimited exposure to an increase. This “extra” value over the intrinsic value, called time value, measures the expected volatility in the value of a company’s assets. Time value increases when expected volatility rises. The greater the reasonable range of possible outcomes for future asset values, the greater the time value. If there is a very high probability the value of the asset will soar, even if there is an equally high probability it will collapse, the limited exposure to a collapse combined with unlimited exposure to soaring values will ensure a very high time value.

A company’s share price, like the price of an option, is the sum of the intrinsic value and the time value. The ratio between the two varies as a function of solvency. Time value accounts for 100% of the share price of an insolvent company. However, for a solvent company, time value accounts for a steadily declining percentage of the share price as the value of assets rises relative to liabilities.

SOLVENT V. INSOLVENT

The sensitivity of the share price to changes in asset value increases as the value of a company’s assets rises relative to its liabilities. For an insolvent company this sensitivity is low, which is another way of saying that changes in the value of underlying assets have only a small impact on the share price of an insolvent company. For solvent companies, it is the opposite. Changes in equity value of these companies are highly sensitive to changes in asset value, and as market valuations of the company’s assets rise or fall, there will be a significant impact on the value of the company’s shares.

In the case of high intrinsic value companies, the main driver of changes in the share price is likely to be changes in investors’ assessment of asset values, which directly affects intrinsic value. Because companies are likely to have a wide mix of assets, on average the total value of these assets is not likely to vary very much since they may be largely uncorrelated. This is also true of well-managed banks, whose loans are highly diversified by industry and region. Generally for companies in the same industry, the greater the intrinsic value the less volatile share prices tend to be.

Sometimes shares have very little or no intrinsic value. The share price of new Internet companies, for example, consists almost entirely of time value since these companies have low intrinsic value. In spite of their lack of assets, however, Internet companies often receive high valuations. This may seem paradoxical at first, because we normally associate high valuations with low volatility, but Internet companies are valuable precisely because their future outlook is so uncertain – ranging from quick bankruptcy to massive future profitability.

Companies that are insolvent or nearly insolvent also have little to no intrinsic value. Their liabilities are not much less, and sometimes greater, than the value of their assets. Like Internet companies, the value of their shares consists only, or mostly, of time value. Nonetheless if the value of the underlying asset is very volatile, the shares of the insolvent company, like call options and Internet shares, can still be valuable. Their value consists not of net assets, but of the possibility that the company will generate very high revenues, or its assets rise sharply in value, at some future point.

This implies, conversely, that changes in the value of the underlying assets have only a minimal impact on the share price (until the value of assets has risen enough to approach or exceed liabilities). Share prices for insolvent companies are likely to rise or fall primarily because of changes in expected volatility, and because expected volatility can change often and dramatically, it is normal for their shares to rise and fall in price much more sharply than shares in general.

Chinese bank shares typify this kind of behavior. Their shares have no intrinsic value because their liabilities exceed the value of their assets. However even though investors may agree that Chinese banks are insolvent, they may still believe that the shares of these banks, like shares in Internet start-ups, are valuable. This is because in valuing these shares, the value of the underlying assets is much less important than the expected volatility of those assets.

The value of the Chinese banking franchise is closely tied to long-term economic growth in China. No matter how pessimistic he may be about the total amount of nonperforming loans, any investor who believes that China’s economic outlook is extremely volatile will place a high value on a call option giving him access to this volatility. Precisely because their shares have no intrinsic value, large Chinese banks are among the best assets with which to make pure bets on the volatility and growth of the underlying economy, and because China is undergoing radical reform this makes bank shares valuable even if the banks are in poor shape. As long as China's economy lurches forward, and as long as expected GDP growth in the foreseeable future is very high, bank share prices will hold up or even strengthen. But when the economy shows danger signs, or when expected GDP growth is revised substantially downward, bank shares will suffer disproportionately.

This is not the first time markets have placed high values on the shares of insolvent banks. Large developing countries in the process of rapid reform and change are almost always likely to see extremely high values placed on their bank shares, even when (and this is often the case) the banks' loan portfolios are doubtful. One recent example is the case of Mexico in 1990-92 when it privatized 18 state-owned commercial banks – the entire banking system – as part of a process of reform that promised to change the Mexican economic and political landscapes dramatically.

At the time Mexico was just emerging from nearly a decade of crisis, and as in China today, reform in Mexico created both great uncertainty and great optimism. After years of government mismanagement Mexico's outlook seemed filled with great potential, although the reform experiment was also fraught with risk. With such high volatility around expected future GDP growth, investors placed an extremely high value on ways to access Mexican economic volatility, in the same way that investors would expect to pay a lot for an option on a very volatile asset.

They showed how much they were willing to pay when the banks were privatized. The prices at which the 18 banks were sold stunned even the government agencies responsible for the sales. Mexican banks, whose loan portfolios were doubtful at best and who were in nearly every case technically insolvent, sold for an average of more than three times book value – all the more remarkable given that global interest rates were much higher than they are today. Valuation criteria for the banks exceeded those of several of the largest banks in the world. After it was privatized Mexico's largest bank, Banamex, had a price to book value ratio nearly twice that of Citibank, Mexico's largest creditor.

UNSTABLE VALUATIONS

Not surprisingly, the very high valuations placed on Mexican banks by Mexican and foreign investors were extremely unstable. As the first positive impacts of reform were felt, valuations rose even higher, but this was not to last. The Mexican crisis of 1994 saw bank share prices totter and then collapse, and for the next few years as the outlook for Mexico’s economy shifted, their share prices fluctuated violently.

By 1998, Banamex was trading at little more than half of book value as the impact of the Mexican and Asian crises slowed Mexico’s growth prospects. Not surprisingly, there was also a surge in nonperforming loans. By the late 1990s Mexican authorities were so concerned about the poor performance of the banks that they permitted and encouraged sales to better-capitalized foreigners, and today most major Mexican banks are foreign-owned. Citibank purchased Banamex in 2001.

There is an important lesson to be learned from the experiences of other developing countries undergoing reform. The success of the Chinese bank IPOs should not be seen as a referendum on the health of the banking system or on the process of banking reforms. As was the case in Mexico and in other developing countries going through dramatic reform, the success of the IPOs reflects primarily investor willingness to speculate on a very volatile set of outcomes. High expected volatility can lead to high option prices and high share prices, but just as already high share prices can soar at any good news about the economy, they will drop drastically at any bad news.

This has implications for bank regulators. For years economists have argued that China’s banking regulators need a more effective monitoring system. Although China’s regulatory bodies are filled with capable managers, the problems in the Chinese banking system are too deep to be easily managed and often involve political sensitivities that make it difficult to identify and resolve problems. It was thought that these issues might be partially resolved by the IPOs. One of the functions of a securities market, after all, is to provide clear signals about market perceptions of risk and value, and these market perceptions could be harnessed by Chinese regulators. By publicly listing the large Chinese banks in the international markets, regulators hoped to enlist the aid of thousands of sophisticated investors from around the world to assess and judge the operating performance of these banks.

It is not clear, however, that changes in bank share prices will in fact have much signaling value to regulators. Soaring prices do not indicate that investors are satisfied with the pace of reform or the resolution of nonperforming loans in the banking sector. They indicate that investors are betting on continued rapid GDP growth. If and when China enters into what investors think is a material slowdown in expected long-term growth, bank share prices will fall sharply even if bank loan portfolios are improving.

It will not be until the banks gain comfortable levels of solvency that the informational content of their share price behavior will resemble that of their developing-country peers. But for now, by avidly purchasing shares in Chinese bank IPOs, the market is not saying that it has evaluated the Chinese banking system and found it satisfactory. It is saying something very different – that Chinese bank shares represent a good way to speculate on Chinese economic volatility. Optimists, like me, may believe that in the long run this will turn out to be a good bet, but for now no one should take much comfort in recent price performance. The Chinese banking system is still a mess, and it will be years before we can decide otherwise. It will also be years before changes in share prices tell us much about the fundamental health of the banks.