Case Study

Jiaqi Li

1.

Jasper Wang: He was one of the vice presidents of the Risk Management department in a competing US investment bank and now he is the new risk manager in Guang Guo. His goal is to introduce international standards of risk management to Guang Guo because Guang Guo aimed to become a true international investment bank based in China.

Jianguo Lu: He is the head of reading and asset allocation department at Guang Guo. His goal is to generate earnings for the bank and maximize the profit of the trading department. He does not agree with Jasper's idea about the new framework of the VaR and does not cooperate with Jasper Wang.

Charles Pan: He is the CEO of the Guang Guo. His goal is to rationalize Guang Guo's returns and at the same time, he does not want to have conflict with Jianguo Lu since Jianguo earns the bank a lot of profits. Thus, he hired Jasper as an expert in risk management to coordinate with Jianguo and to help the bank rationalize returns so that the bank could establish international branches with maximized risk-adjusted returns.

When we look at these 3 people, we can clearly see that there is a conflict between Jasper and Jianguo because Jianguo believes that the idea about the new international framework of risk management introduced by Jasper will not work in China. If Jianguo used Jasper's idea, he would not be able to gain as much profit as he could because he cannot take as much risk as possible to maximize the profit as he used to do. Since Jianguo earns the bank a lot of profit, he is power person in the bank. Thus, Charles Pan does not want to have conflict with Jianguo and he hired Jasper to help him deal with Jianguo.

2.

Jasper's main job is to measure and monitor VaR. Since the VaR is simple and easy to understand, it is recommended by the international banking regulators and it is used by many leading investment banks in the world to compute the bank's minimum capital requirements. In addition, VaR is an internationally accepted standard of risk regulation.

3.

The reason why Jianguo resist the new risk management framework, the VaR model, is because he believes his experience in Chinese market is more important than the fact-based valuation of a company's fundamentals. His experience and his understand of Chinese market tell him that statistical models would not be able to capture anything in Shanghai Equity markets since the market is dominated by speculative retail investors and is driven mainly by momentum and rumor, which makes Chinese stock market quite different than the US stock market. In addition, Jianguo thinks that US and Europe suffered from many financial crises due to the incorrect price of risk even they had used many sophisticated models in risk management.

4.

(a)

Shanghai: In all years from 2000 to 2014, the model failed once. Average percentage exception is 5.6%

S&P: In all years from 2000 to 2014, the model failed twice. Average percentage exception is 6.1%

The model actually works fine both in Chinese and US market even though these 2 markets are significantly different.

(b)

Shanghai	6 months lookback period	9 months lookback period
Number of times model failed	1	4
Average percentage exception	5%	4.9%

S&P	6 months lookback period	9 months lookback period
Number of times model failed	6	7
Average percentage exception	5.6%	5.6%

Based on the statistics above, we can tell that using more historical data is does not indicates a better estimation. This would also indicate that the model does not successfully capture the volatility change in the market. One interest thing to mention is that the model actually perform better in

Chinese market than in US market. The reason would be that the US market is more volatile than the Chinese market during the financial crises.

(c)

On 95% confidence interval, there should be 5% exceptions on average during the 15 years. We have tested that the model have the average percentage exception around 5% in 3, 6, and 9 months lookback period in both Chinese and US markets, which indicates that the model is a good measure of risk. However, the model failed more times in longer lookback period based on the Kupiec 2 tailed t-test. Thus, the model should be used in a shorter lookback period (3 months) and may be people make some adjustments to the model so that the model could be used in longer lookback period.

5.

Jasper could use the backtest result to support his argument that VaR is a good risk measure in Chinese market even though the US market and Chinese market are quite different. Also, he could suggest to use 3 months lookback period when implementing the model in Chinese market.

6.

I don't think Jasper can convince Jianguo to use his current suggested new framework of risk management. The model could work in long-term, but it may not work very well in short-term and cannot capture sharp movement of the Chinese market as an emerging market. Also, the VaR assumes normal distribution on stock returns, which is not true for the Chinese market. In addition, since the trading department is making huge profit for the bank, it is really hard for the department to give up on its current great performance and compromise to Jasper's idea. I would suggest Jasper to do more research on Chinese market and adjust the assumptions of VaR first so that the model could better fit the Chinese market. If he could provide stronger evidence that the model with adjusted assumptions would work well in the Chinese market without bringing down too much the profit the trading department are making now, he may probability convince the trading department to implement the model.

7.

Currently, there are 4 tiers in the Chinese banking regulatory framework: 1. legislation enacted by National People's Congress, 2. regulatory policies set by the CBRC, 3. CRBC's guidance, notices, and rules, 4. CBRC's Window Guidance measures.

After the global financial crisis, the CBRC introduced new macro prudential regulatory measures to address pro-cyclicality and to strengthen the resilience of the entire banking sector. These included a higher capital ratio, and, leverage and provisioning ratios. Specifically, the provisioning ratio on expected loss is set at 2.5 percent. This ratio aims at controlling non-performing loan.