

# **The Impact of Interest Rate Liberalization Announcement in China on the Market Value of Hong Kong Listed Chinese Commercial Banks**

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## **Abstract**

This paper examines the impact of the announcement of interest rate liberalization by the People's Bank of China on the market value of Hong Kong listed Chinese commercial banks by using the econometrics of event study. We find that their stock prices fall significantly in response to the announcement of interest rate liberalization. This finding supports our belief that interest rate liberalization narrows the net interest margin and profitability of the banking system.

**JEL Classification numbers:** C580, E58

**Keywords:** Econometrics of event study, Interest rate liberalization.

## **1 Introduction**

Interest rate liberalization in China is a widely-discussed topic (for example, Feyzioglu, Porter, and Takáts, 2009). It is believed that when the interest rate is determined by market forces instead of the government, the efficiency of financial resource allocation in Chinese economy will be improved and hence the performance of the economy will be enhanced in the long run.

The unlash of interest rate control encourages the free competition of commercial banks for depositors and borrowers, narrowing the net interest margin (NIM) - bidding up the deposit rates and reducing the lending rates.

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As NIM contributes a major part of profits to Chinese commercial banks<sup>2</sup>, their profits and their stock prices are expected to decline.

On June 7, 2012, the People's Bank of China (PBC) announced without notice in advance that it decided to cut benchmark lending and deposit rates by the same percentage points and to expand the floating range of lending and deposit rates as of June 8, 2012.<sup>3</sup> Both the 1-year benchmark lending and deposit rates were cut by 0.25 percentage points, and the benchmark rates for other maturities were also reduced. Simultaneously, the PBC allowed commercial banks to set lending rates at or above 0.8 times the benchmark rates (previously the lower bound was 0.9 times the benchmark rates), and deposit rates at levels at or below 1.1 times the benchmark rates (previously deposit rates were not allowed to exceed benchmark rates). This announcement provides a signal to the public that the PBC starts to release the control of interest rate and allow the determination of interest rates by market forces.

The policy move implies that commercial banks could bid up deposit rates due to keen competition between banks and other deposit-taking financial institutions. On the other hand, they could reduce lending rates due to competition between banks for borrowers. As a result, the banking system's NIM might fall. Table 1 shows the changes in NIM before and after the policy move. In the extreme case, NIM might fall to 1.473%.

Table 1: Net Interest Margin before and after the announcement on June 7, 2012

	Loan interest rate (1 year)		Deposit interest rate (1 year)		Net interest margin (NIM)	
Before	Benchmark	6.56%	Benchmark	3.5%	3.06%	(Narrowest)
	Lower bound	5.904%	Upper bound	3.5%	2.404%	(Widest)
After	Benchmark	6.31%	Benchmark	3.25%	3.06%	(Narrowest)
	Lower bound	5.048%	Upper bound	3.575%	1.473%	(Widest)

Source: Website of People's Bank of China ([www.pbc.gov.cn](http://www.pbc.gov.cn))

This paper examines the impact of the announcement of interest rate liberalization in China on the market value of nine Chinese commercial banks<sup>4</sup> listed in Hong Kong stock market by using the econometrics of event study. It is believed that this announcement conveys the message to the public that the profits earned by Chinese commercial banks would decline. Their stock prices would fall in response to the announcement.

<sup>2</sup>For example, net interest income accounted for 95.87% of the total operating income of Chongqing Rural Commercial Bank in the first half of 2012 (Chongqing Rural Commercial Bank, 2012).

<sup>3</sup>PBC, "PBC to cut RMB benchmark deposit and loan interest rates and adjust interest rate floating range":

([http://www.pbc.gov.cn/publish/english/955/2012/20120608171005950734495/20120608171005950734495\\_.html](http://www.pbc.gov.cn/publish/english/955/2012/20120608171005950734495/20120608171005950734495_.html)).

<sup>4</sup>Namely, Agricultural Bank of China, Bank of China, Bank of Communications, Industrial and Commercial Bank of China (ICBC), China Construction Bank, China Merchants Bank, China Minsheng Bank, CITIC Bank International, and Chongqing Rural Commercial Bank.

A similar study is conducted by Kwan (2003) who examines the effects of a series of events leading up to the deregulation of deposit interest rates in Hong Kong on the market value of banks in Hong Kong. All the evidence suggests that banks earned rents from deposit interest rate rules, and deregulation would lower these rents and hence bank market values. On average, the total abnormal return due to interest rate deregulation was around negative 4 percent.

The rest of the paper is organized as follows. The data and methodology are discussed in Section 2. Results of event study are studied in Section 3. Section 4 concludes this paper.

## 2 Data and Methodology

Following the standard event study approach (for example, Brown and Warner, 1985; Johnson, 1998), residual returns for each of Chinese commercial banks listed in Hong Kong stock market for an 11-day window centered on the date of the announcement are calculated. Daily expected bank stock returns are estimated using the standard market model (Fama, 1985):

$$R_{jt} = \alpha_j + \beta_j R_{mt} + \varepsilon_{jt} \quad (1)$$

where  $R_{jt}$  is bank  $j$ 's stock return at day  $t$ ,  $R_{mt}$  is stock return at day  $t$ ,  $\alpha_j$  and  $\beta_j$  are a bank specific intercept and the covariance with the market respectively. The error term,  $\varepsilon_{jt}$ , is assumed to have zero mean, be independent of  $R_{mt}$ , and be uncorrelated across firms. Rearranging the terms in (1), the estimated residual return for any stocks predicted from the model is equal to:

$$\hat{\varepsilon}_{jt} = R_{jt} - \hat{\alpha}_j - \hat{\beta}_j R_{mt} \quad (2)$$

The residuals from (2) are used to test the competing hypothesis relating to interest rate liberalization. The ordinary least square estimates,  $\hat{\alpha}$  and  $\hat{\beta}$ , are estimated using daily stock returns from days  $-100$  to  $-25$  relative to the announcement date.

The test statistic is the ratio of the day  $t$  mean excess return to its estimated standard deviation; the standard deviation is estimated from the time-series of mean excess returns. The test statistic for any day  $t$  is equal to:

$$\bar{\varepsilon}_t / \hat{S}(\bar{\varepsilon}_t) \quad (3)$$

where:

$$\bar{\varepsilon}_t = \frac{1}{N} \sum_{i=1}^N \varepsilon_{it} \quad (4)$$

$$\hat{S}(\hat{\varepsilon}_t) = \sqrt{\sum_{t=-100}^{-25} \frac{(\bar{\varepsilon}_t - \bar{\omega})^2}{75}} \quad (5)$$

$$\bar{\omega} = \frac{1}{76} \sum_{t=-100}^{-25} \bar{\varepsilon}_t \quad (6)$$

and  $N$  equals the number of banks.

Daily stock returns for all nine listed Chinese commercial banks in Hong Kong stock market are obtained from Bloomberg. The daily returns of the Hang Seng Stock Index are used as a proxy for the market return.

### 3 Event Study Results

Table 2 reports the mean residual daily returns from the market model for an eleven-day period surrounding the announcement on June 7, 2012. The sample consists of nine Chinese commercial banks listed in Hong Kong stock market. The mean residual returns are negative from day  $-2$  to day  $+4$ . The mean residual returns on day  $+1$  and day  $+2$  are statistically significant at the 5% level. We can conclude that the announcement of interest rate liberalization reduces the market value of Hong Kong listed Chinese commercial banks. This impact is statistically significant after the announcement.

Table 2: Mean residual returns and standard deviations for an 11-day period surrounding the announcement on June 7, 2012

Day Relative to the Announcement Day (Day 0 = 7 June, 2012)	Mean Residual Return	Test Statistic
-5	1.3005%	1.8198
-4	-0.1277%	-0.1787
-3	0.0396%	0.0554
-2	-0.1631%	-0.2283
-1	-1.2440%	-1.7407
0	-0.7442%	-1.0413
+1	-3.0635%**	-4.2868
+2	-1.7756%**	-2.484
+3	-0.3169%	-0.4434
+4	-0.4782%	-0.6691
+5	0.5438%	0.7609

\*\* Indicate significance at the 5% level

### 4 Conclusion

On June 7, 2012, the People's Bank of China (PBC) announced without notice in advance that it decided to expand the floating range of lending and deposit rates as of June 8, 2012. This announcement provides a signal of the commencement of interest rate liberalization in China to the public. This paper uses the event study methodology to examine the impact of the announcement of interest rate liberalization in China by PBC on the market value of Hong Kong listed Chinese commercial banks. We find that their stock prices fall significantly in response to the announcement by PBC. This finding supports the belief

that interest rate liberalization would narrow the net interest margin and reduce the profitability of the banking system.

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