

行政院國家科學委員會專題研究計畫成果報告

三商銀民營化之進程及其股價之變動

Privatization and Stock Returns of Public-Owned Commercial Banks in Taiwan

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中文摘要

本研究以三商銀民營化之漸進過程為研究主體，觀察各類關於三商銀民營化之訊息，是否具有宣告效果，亦即，相關之各類訊息，是否造成三商銀股票之市場價格產生顯著的變化。基本上，關於民營化之訊息可分為正面與負面兩種，一為預期民營化後效率提昇而產生正效果，另一為民營化所連帶之釋股，因預期未來短時間內市場胃納不足，而造成的負效果。研究結果發現，三商銀民營化之相關訊息宣告，在市場上產生顯著之正價格效果，並且，此超額報酬在訊息的見報日即反映在市場上。據此推知，台灣投資人對於三商銀等公營事業的民營化，多抱持經營效率提昇之預期，此一結果可作為未來其他公營機構規劃民營化時之參考。

關鍵詞：民營化、股權、超額報酬、事件分析、銀行、台灣

Abstract

This study investigates if there is a price effect around the dates when privatization-related information of

public-owned commercial banks in Taiwan is published on newspapers. After an event study methodology is applied, a positive price effect is observed. The result implies that investors expect the emergence of more efficient and competitive commercial banks after privatization.

Keywords: Privatization, Ownership, Abnormal Returns, Event Study, Banks, Taiwan

I Introduction

In Taiwan, privatization of public-owned enterprises has become an important issue from the late 80's. Before any privatization process took place, the regulations for privatization were drawn up. In 1991, Taiwan government passed a privatization law called Transformation of Enterprises from Public-Owned to Private-Owned Act. According to this Act, the first public-owned enterprise was successfully privatized in the year 1994.

The privatization of public-owned enterprises has gained wide attention

and been progressing continuously. In this study, I examine if there is a price effect around the dates when the news about privatizing three public-owned commercial banks in Taiwan were announced. These three banks are the First Commercial Bank, the Hua Nan Commercial Bank and the Chang Hua Commercial Bank. Theoretically, if a price effect exists, it can be a positive effect or a negative effect. If investors interpret the news related to bank privatization as a formation of a more efficient firm, and expect an increase of future cash flows, a positive price effect is expected after privatization announcements. On the contrary, if investors believe that the privatization of public-owned commercial banks is associated with releasing large amount of shares owned originally by the government, and that the market is incapable to absorb these shares in a short run, it may cause a negative price effect when privatization information is announced.

After an event study methodology is applied, this study observes a positive price effect on the date when privatization-related information is published on newspapers. The abnormal positive returns remain significant for intervals (0,1) and (0,2) if abnormal returns are estimated on an accumulative basis. This study is organized as follows. Section I introduces the purposes of this study. Section II describes the data and

methodology. Section III reports the results and the final section concludes.

II Data and Methodology

The event date is defined as the dates when any related news regarding the privatization of the three observed public-owned commercial banks is published on newspapers. All events are searched through the Central News Agency's Searching System. There are totally eight events found from the system during April, 1997 to January, 1998, ie., the privatizing period. The daily returns of these three public-owned commercial banks are retrieved from the Taiwan Economic Journal Data Bank. The daily return of an equal-weighted portfolio consisting these three public-owned banks is calculated by summing up the daily returns of these three banks and then divided by three. The market model parameters of this portfolio are estimated as follows.

$$R_t = \alpha + \beta R_{mt} + e_t$$

where R_t is the daily return for the public-owned-bank portfolio on day t , and R_{mt} is the daily return for the Taiwan Weighted Stock Index on day t . The coefficients α and β are ordinary least squares estimates of this portfolio's market model parameters. The estimation period includes 75 trading days, which are days from the 90th to the 16th trading days before the event date. The prediction error for this public-owned-bank portfolio on day t is defined

as

$$PE_t = R_t - (\quad + R_m)$$

The prediction errors here are calculated for each day in the event period that during 15 trading days before and after the event date. The average prediction error of this public-owned-bank portfolio on event day t for N time announcements is

$$APE_t = \frac{1}{N} \sum_{j=1}^N PE_{jt}$$

The statistical significance is tested by the Z-statistic as

$$Z = \sqrt{N}(ASPE_t)$$

where

$$ASPE_t = \frac{1}{N} \sum_{j=1}^N SPE_{jt}$$

The $ASPE_t$ here is the average standardized prediction error and SPE_{jt} is the standardized prediction error defined as

$$SPE_{jt} = PE_{jt} / S_{jt}$$

where

$$S_{jt} = \left\{ V_j^2 \left[1 + \frac{1}{ED} + \frac{(R_{mt} - \bar{R}_m)^2}{\sum_{i=1}^{ED} (R_{mi} - \bar{R}_m)^2} \right] \right\}^{1/2}$$

In here, V_j^2 is the residual variance of different announcement j's market model regression, ED is the number of days in the period used to estimate the market model, \bar{R}_m is the mean market return in the estimation period.

In this study, the significance of accumulated abnormal returns around the event date is investigated. The

average interval prediction error for any specific interval from day T_1 to day T_2 is calculated as

$$AIPE_{T_1, T_2} = \frac{1}{N} \sum_{j=1}^N \sum_{t=T_{1j}}^{T_{2j}} PE_{jt}$$

The null hypothesis that the average interval standardized prediction error equals zero is tested by the Z-statistic as

$$Z = \sqrt{N}(AISPE_{T_1, T_2})$$

where $AISPE$ is the average interval standardized prediction error, and is defined as

$$AISPE_{T_1, T_2} = \frac{1}{N} \sum_{j=1}^N \sum_{t=T_{1j}}^{T_{2j}} SPE_{jt} / \sqrt{T_{2j} - T_{1j} + 1}$$

III Result

The prices responding to the privatization of these three public-owned commercial banks are reported in Table 1. The significant Z value for the event date, ie., the interval (0,0), indicates that the publication of privatization news has a positive effect on the stock returns of these three banks right after the related information is released. The insignificant Z values for (1,1) and (2,2) indicate that the market reflect the related information quite efficiently. However, if the abnormal returns are estimated on an accumulative basis, the positive price effect remains significant for two days after the event date.

Table 1: AIPE and Z values for various intervals surrounding the event date

Interval	AIPE	Z	Interval	AIPE	Z
(-3, 0)	0.010637	1.093186	(-1, -1)	-0.001548	-0.462816
(-2, 0)	0.019597	1.822660	(1, 1)	0.010416	1.730391
(-1, 0)	0.017436	1.635106	(2, 2)	-0.000206	-0.323755
(0, 0)	0.018984	2.775205**	(-5, 5)	0.023488	1.129058
(0, 1)	0.029400	3.185938**	(1, 5)	-0.002385	0.900165
(0, 2)	0.029194	2.414387*	(-5, -1)	0.006888	0.567520
(0, 3)	0.022643	1.649775	(1, 15)	0.048998	1.905414
(0, 4)	0.027592	1.840843	(-15, -1)	-0.007128	-0.199461
(0, 5)	0.016599	1.010679	(-15, 15)	0.060855	1.685117

*: Significant at a 5% level. **: Significant at a 1% level.

IV Conclusion

In this study, I analyze whether there is a price effect around the dates when the news of privatizing three public-owned commercial banks in Taiwan are announced. After an event study methodology is applied, it is found that there is a positive price effect associated with the privatization-related information. The results indicate that investors in Taiwan view the privatization news as positive information, and believe the restructure of these public-owned banks can make them become more productive, efficient and competitive. Although, theoretically, there is a possibility that the market may be incapable to absorb the released shares originally owned by the government in a short run, no negative price effect is observed in this study.

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計畫成果自評

本計畫研究內容與原計畫相符，結果發現三商銀民營化的訊息會在市場上引起正向價格效果。現有之國內外相關研究，就投資大眾對銀行民營化的探討並不多，末學擬將本次計畫之研究報告加以擴展，並輔以介紹說明本國公營企業民營化之背景與成效及三商銀民營化之歷程，於未來投稿國際學術研討會及期刊。