



402 Views | 41 CrossRef citations to date | 0 Altmetric

Original Articles

# Off-balance sheet activities and cost inefficiency in Taiwan's Banks

Pang-tien Lieu, Tsai-lien Yeh & Yung-ho Chiu

Pages 925-944 | Published online: 20 Aug 2006

🗨️ Cite this article 🔗 <https://doi.org/10.1080/02642060500134196>

Sample our  
Economics, Finance,  
Business & Industry Journals  
>> [Sign in here](#) to start your access  
to the latest two volumes for 14 days

📄 Full Article

📊 Figures & data

📖 References

🗨️ Citations

📊 Metrics

📄 Reprints & Permissions

Read this article

🔗 Share

In this study, we adopt a stochastic cost frontier method to investigate the influence of off-balance sheet (OBS) activities on the cost efficiency of Taiwan's banks. We estimate and compare cost inefficiency with or without OBS outputs of 46 Taiwanese commercial banks during the period, 1998 through 2001. The conclusions of this empirical study are as follows. First, omitting off-balance sheet outputs in estimating the cost frontier function of banks results in an underestimation of bank efficiency by approximately 5 per cent. Second, large banks are associated with a higher cost efficiency and have an increased ability to develop OBS activities. This is consistent with Taiwan's regulatory policies, which focus on promoting efficiency in the banking industry of emerging markets. Banks with higher employee productivity are also more cost efficient. Finally, we observe evidence of economies of scale in both models with or without OBS specification in Taiwan's bank industry. Economies of scope between loans and OBS outputs are also observed.

# Notes

1. Chen and Yeh [1998](#) adopted four outputs – loan services, portfolio investment, interest income, and non-interest income – to analyse the relative efficiency of 34 commercial banks in Taiwan, by using the data envelopment analysis method. In later research, Chen and Yeh [2000](#) used loan services, portfolio investment, and non-interest income to measure bank efficiency, ownership and productivity changes in Taiwan.
2. According to the official report of the Ministry of Finance, any loan for which repayment of interest has been overdue for more than six months will be classified as a non-accrual loan.
3. Cost inefficiency 27 per cent equals  $1-(1/1.3762)$ .

---

## Related research

People also read

Recommended articles

Cited by  
41

## Information for

[Authors](#)

[R&D professionals](#)

[Editors](#)

[Librarians](#)

[Societies](#)

## Opportunities

[Reprints and e-prints](#)

[Advertising solutions](#)

[Accelerated publication](#)

[Corporate access solutions](#)

## Open access

[Overview](#)

[Open journals](#)

[Open Select](#)

[Dove Medical Press](#)

[F1000Research](#)

## Help and information

[Help and contact](#)

[Newsroom](#)

[All journals](#)

[Books](#)

## Keep up to date

Register to receive personalised research and resources by email



Sign me up



Copyright © 2025 Informa UK Limited [Privacy policy](#) [Cookies](#) [Terms & conditions](#)

[Accessibility](#)



Taylor & Francis Group  
an informa business

Registered in England & Wales No. 01072954  
5 Howick Place | London | SW1P 1WG