Economies of scale and a process for identifying hypothetical merger potential in Indonesian commercial banks

Muliaman D. Hadad [a], Maximilian J.B. Hall [b], Wimboh Santoso [a], Richard Simper [c,*]

[a] Bank Indonesia, Jl. MH. Thamrin 2, Jakarta, 10350, Indonesia
[b] School of Business and Economics, Loughborough University, Loughborough, LE11 3TU, UK
[c] Nottingham University Business School, Jubilee Campus, Nottingham, NG8 1BB, UK

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ABSTRACT

The aim of this study, through the estimation of a cost function, is to estimate the scale economies and scale and X-inefficiencies of commercial banks operating in Indonesia with a view to identifying hypothetical mergers that could deliver significant cost savings. Economies of scale are typically only found for the largest and smallest banks, with the industry's estimated scale inefficiency averaging 4.4% and the X-inefficiency averaging 23.1%. The main cost reductions identified would result from mergers within the State-owned grouping, where estimated savings of up to Rp 16.7 billion (US$ 1.8 billion), 34% of total costs, would have been secured over the sample period 2004–09. A merger between two Non-foreign Exchange banks would also have proved beneficial.

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1. Introduction

Since the global financial crisis (GFC) of 2008/09, policy makers around the world have sought to identify potential mergers that might stabilise their domestic banking sectors. In Indonesia, however, consolidation of the banking sector through mergers and other means has been an official post-Asian Financial Crisis (AFC) policy objective of the central bank (Bank Indonesia) since 2004. Accordingly, this paper seeks to identify hypothetical potential mergers that could usefully advance this process of consolidation within the Indonesia commercial banking sector. The methodology employed to identify the prime candidates for potential merger is the estimation of a bank cost function, which can then be used to estimate banks' scale economies and scale inefficiencies (see, for example, Altunbas, Liu, Molyneux, & Seth, 2000). The X-efficiencies of Indonesian banks were also calculated using the distribution free approach, as adopted by Berger (1993) and Berger and Hannan (1998). In line with Rhoades (1993), we analyse the cost and scale and X-efficiency improvements resulting from the hypothetical mergers. However, because our study just considers hypothetical and not actual mergers, we are unable to follow the approach of Rhoades (1993) in analysing changes in expenses ratios. Furthermore, in agreement

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* Corresponding author. Tel.: +44 115 846 7654; fax: +44 115 846 6667.
E-mail address: Richard.Simper@nottingham.ac.uk (R. Simper).

with Bauer, Berger, Ferrier, and Humphrey (1998), we consider the effects of hypothetical Indonesian bank mergers based on the use of frontier techniques rather than standard financial ratio analysis, and exclude banks that merged in our sample period.

The paper is structured as follows. The next section provides a review of the Indonesian banking system and recent official moves to consolidate that system. Section 3 provides a short review of the empirical literature on bank mergers and scale economies. Section 3 also sets out the estimation methodology employed. Section 4 describes the data and variables used in the investigation. Section 5 discusses the empirical results and the implications for bank mergers in Indonesia. Section 6 summarises and concludes.

2. A review of the Indonesian banking system and recent official consolidation moves

The Indonesian commercial banking industry offers academics and practitioners an interesting market for analysis given the global financial crisis of 2007/08 and how the country escaped relatively unscathed from the contagion of collapsing financial institutions. For example, at end-2010, 123 commercial banks, 9300 rural banks, 13,000 Cooperative banks and 8000 microfinance institutions were operating in Indonesia. However, the importance of the commercial banking system to the economy cannot be underestimated. That is, in terms of the ownership of financial sector assets, in 2008 the banking industry held over 80%, pension funds, 3.2%, insurance firms, 8%, finance companies, 5.8%, securities companies, 2.7%, and pawn shops, 0.3%. This led the central bank to reissue guidelines restating their aim to promote consolidation of banks to ensure that, by 2019, all provisions with regard to capital and liquidity requirements of banks would follow Basel III (Basel Committee on Banking Supervision, 2010), with full implementation of Basel II expected from January 2012.

The rationale for consolidation of the Indonesian banking sector is based on the fact that many of the banks are small in asset size compared to their larger State-owned counterparts and hence could be at a disadvantage when complying with new capital requirements, especially under Basel III. Indeed, the current post-AFC consolidation strategy of Bank Indonesia began in January 2004 when the first Indonesian Banking Architecture (API) was introduced. This envisaged that the total number of commercial banks could be reduced from the then 132 to around 58 by 2010, especially targeting the country's smallest 52 banks that held less than US$ 11 million in capital. The API originally set out an overarching aim for a sound, strong, and efficient banking system to create financial system stability for promotion of national economic growth and was supported by six pillars: a healthy banking structure; an effective regulation system; an effective and independent supervisory system; a strong banking industry; adequate infrastructure; and robust consumer protection.

In terms of mergers and takeovers, Bank Indonesia also introduced the 'anchor' bank concept of High Performing Banks. With the potential and initiative to acquire smaller banks, they would be used to drive the consolidation process (Bank Indonesia, 2005). The anchor bank-based merger policy was further amended in 2008, where Bank Indonesia envisaged at the end of the merger process that the industry would be served by: two or three international banks (each with total capital exceeding Rp 50 trillion); 3–5 national banks (total capital of between Rp 10 trillion and Rp 50 trillion); 30–50 small business banks (total capital of Rp 100 billion up to Rp 10 trillion); and finally rural banks (total capital of less than Rp 100 billion).

Secondly, to further induce consolidation in the banking industry, Bank Indonesia regulation 8/16/PBI/2006 limited foreign owners to taking a majority stake in only one bank. This regulation included whether the bank was conventional or Sharia (before the AFC foreigners were limited to an 85% stake in a bank but after 1997/98, to help stabilise the banking sector, this was increased to 99%).

Thirdly, Bank Indonesia introduced regulations concerning bank capitalisation levels. This meant that banks must have a minimum capitalisation of Rp 80 billion (US$ 8.81 million) by 2007, increasing to Rp 100 billion (US$ 10.2 million) by 2010; this meant that many small private banks would have to merge or otherwise close their doors. Although the regulatory minimum for the risk-weighted capital adequacy ratio is 8%, consistent with Basel II, Bank Indonesia's informal target is 12%, and the average ratio at end-2009 stood at 17.5%, with an average Tier I ratio of around 16% and an average leverage ratio of 10%.

Fourthly, in June 2006, Bank Indonesia introduced the single presence policy that prohibits investors from holding more than 25% of the shares of more than one bank (Bank Indonesia Regulation 8/16/PBI/2006). This created problems, not only for multiple holdings by foreign investors but also for the government itself, which owned stakes in five of the country's largest banks, including Bank Mandiri, Bank Rakyat Indonesia and Bank Negara Indonesia. The hope was that the single presence policy would lead to further consolidation within the industry in the coming years. With respect to the Single Presence Policy-induced mergers, in 2008 Bank Niaga and Bank Lippo underwent a Rp 24.6 trillion merger to form the 5th largest Indonesian bank, CIMB Niaga. In addition, Bank OCBC NISP and Bank OCBC Indonesia merged in 2010 to form Bank OCBC NISP having total combined assets of Rp 47.6 trillion (US$ 5.31 billion) where both previous banking entities were majority-owned by Singapore's OCBC Bank.

Finally, the Financial Stability Net, introduced in 2007, saw a reduction in the depositor guarantee level from Rp 2 billion to Rp 100 million (US$ 11,000), which covers 98% of all depositors and 38% of deposits. Given the increased risk of holding cash in banks in excess of the deposit guarantee level the Bank hoped that investors would be more selective in their choice of bank, leading to a natural consolidation in the banking industry in Indonesia. This shows that Bank Indonesia has adopted an active consolidation process in which their aim is to ensure stability across a smaller number of banks operating in Indonesia.