Chapter 7
Asset Diversification and Efficiency of Islamic Banks

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ABSTRACT
This chapter examines the effect of asset diversification (AD) on the efficiency of Islamic banks using conventional banks as the contrast sample. Data Envelopment Analysis (DEA) is used to generate efficiency score as a proxy of bank efficiency and the Tobit panel data model is estimated. A review of banks in three Asian countries with a dual banking system from 2006 to 2012 indicates that AD positively affects bank efficiency, regardless of bank type. In addition, the positive effect of AD on bank efficiency strengthens with bank size, particularly for Islamic banks. Furthermore, any positive effect of AD on the efficiency of Islamic banks is particularly found among those without foreign ownership, whereas ownership type plays no role in determining AD’s effect on the efficiency of conventional banks.

INTRODUCTION
The existing literature has extensively explored the relationship between diversification and bank performance (Chen, Liang, & Yu, 2018; Gamra & Plihon, 2011; Mercieca, Schaeck, & Wolfe, 2007; Vallascas, Crespi, & Hagendorff, 2012). However, minimal evidence has been provided to support any relationship between diversification and bank efficiency, particularly for Islamic banks. This gap is counterintuitive because banks should enjoy the benefits of diversification, such as risk-diversification and economies of scope (Chen et al., 2018). These benefits should promote bank efficiency in the sense that risk and cost reduction accompanied by diversification facilitates the reduction of the cost involved when converting inputs to outputs. Importantly, the positive effect of diversification on bank efficiency should be particularly found among Islamic banks primarily because they are generally less diversified and smaller than conventional banks. That is, the former is more capable of reaping a net positive effect of diversification on bank efficiency than the latter (Chen et al., 2018). Accordingly, investigating
the impact of diversification on the efficiency of Islamic banks is a worthwhile endeavor. The reason is that if the results indicate a positive effect of diversification on bank efficiency, then Islamic banks are recommended to engage in diversification to improve bank efficiency. Such a diversification could improve bank sustainability and performance. In addition, the concerned authorities are recommended to adopt regulations that encourage Islamic banks to engage in diversification to facilitate the improvement of efficiency in the banking industry. Hence, this study is conducted to fill in this research gap.

Despite the abundance of research on the relationship between diversification and bank performance, empirical evidence on such a relationship has remained mixed. Prior studies have generally provided evidence indicating that diversification negatively affects bank performance. This finding suggests that the cost of the accompanied agency problems and diseconomies of management outweighs the benefits of the accompanied risk diversification and economies of scope (Acharya, Hasan, & Saunders, 2006; Chen et al., 2018; DeYoung & Roland, 2001; Laeven & Levine, 2007). In addition, diversification’s negative (positive) effect on bank performance is frequently observed among conventional (Islamic) banks (Chatti, Kablan, & Yousfi, 2013; Čihák & Hesse, 2010; Molyneux & Yip, 2013).

Chen et al. (2018) examine the effect of asset diversification (AD) on bank performance in Indonesia, Malaysia, and Pakistan. They find that diversification positively affects asset quality and profitability of banks and that such effects are stronger for Islamic (large) banks than for conventional (small) banks. However, they also determine that diversification has a minimal impact on cost efficiency of conventional banks and no impact on Islamic banks. The possible reason is that the cost-to-income ratio may not be a good proxy for bank efficiency. Tripe (1998) explains that several underlying factors (e.g., structural differences among banks) affect such a ratio, which may not completely reflect bank efficiency.

The current study recognizes the problems with the cost-to-income ratio and extends Chen et al. (2018) by using the data envelopment analysis (DEA)-derived efficiency score as the bank efficiency measure to examine AD’s effect on bank efficiency in Indonesia, Malaysia, and Pakistan. DEA’s main advantage is its capability to use more than one input and output on the basis of real data to derive the efficiency frontier and evaluate each bank’s efficiency. Therefore, the results based on the DEA approach should be more reliable. In addition, the aforementioned three countries are selected primarily because they practice a dual banking system, thereby rendering their banking environment highly competitive. Hence, an analysis should be conducted on AD’s effect on bank efficiency and whether and how such effect is influenced by bank size and foreign ownership in Islamic countries with such a unique banking environment. In particular, the role of foreign ownership in modifying AD’s effect on bank efficiency in a competitive banking environment has remained unexplored and is worth exploring. Foreign ownership can heighten bank competition and transitively mitigate agency problems caused by diversification given the negative association between competition and agency cost (Ammann, Oesch, & Schmid, 2013; Lee, Hsieh, & Yang, 2016). However, foreign ownership can worsen agency problems accompanied by diversification because of its disadvantages, such as the accompanied ineffective cross-border monitoring, more risk-taking, and informational disadvantage (Albertazzi & Bottero, 2014; Chen, Wu, Jeon, & Wang, 2017). Given these two opposing effects of foreign ownership, whether and how foreign ownership modifies diversification’s effect on bank efficiency in a competitive banking environment remain to be seen.

This study proposes three hypotheses. First, AD entails benefits, such as risk diversification and economies of scope (Saunders, Schmid, & Walter, 2014; Vallascas et al., 2012), which should facilitate the efficiency of banks when converting inputs to outputs. Hence, this study posits that AD positively affects bank efficiency. Second, given that large banks are better able to engage in diversification than small banks, AD’s positive effect on bank efficiency should increase with bank size (Chen et al., 2018).
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