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Bank efficiency in emerging Asian countries

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ABSTRACT

The paper examines the relationships between market concentration, bank competition and X-efficiency in banking across six emerging Asian countries—Bangladesh, India, Indonesia, Malaysia, the Philippines and Vietnam—over the period 2005–12. Market concentration has a positive effect on X-efficiency, whereas competition has a negative effect on X-efficiency. Moreover, bank size and gross domestic product growth have positive influences on X-efficiency whereas liquidity risk is negatively related to X-efficiency. In addition, the study has important policy implications for governments and banks with respect to increasing X-efficiency of banking.

1. Introduction

The determinants of bank efficiency are discussed in the vast literature on banking. Numerous studies have found that market concentration and bank competition are significant determinants of bank efficiency; for example, Berger and Hannan (1998), Casu and Girardone (2006), Chen (2009), Delis and Papanikolaou (2009), Delis and Tsionas (2009), Ferreira (2013), Hauner and Peiris (2005), Kirkpatrick et al. (2008), Koetter et al. (2008, 2012), Maudos and de Guevara (2007), Turk Ariss (2010) and Williams (2012). Studies by Casu and Girardone (2009) regards the influence of market concentration on bank efficiency arising from merger and acquisition (M&A) provide conflicting results. In addition several studies investigating the relationship between competition and efficiency have reported contradictory results; Casu and Girardone (2006, 2009), Chen (2009), Fang et al. (2011), Fu and Heffernan (2009), Kirkpatrick et al. (2008), Koetter et al. (2008, 2012), Maudos and de Guevara (2007), Pruteanu-podpiera et al. (2008), Schaeck and Cihak (2008), Turk Ariss (2010) and Williams (2012).

Theoretically the relationships between market concentration, competition and bank efficiency are interpreted by three main hypotheses: the quiet life hypothesis (QLH), the information generation hypothesis (IGH) and the efficient structure

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hypothesis (ESH). According to the QLH; Berger and Hannan (1998) and Hicks (1935), market concentration (or market power) is negatively associated with bank efficiency because market power allows banks to enjoy a 'quiet life' (i.e. allows banks freedom from competition), which in turn reduces bank managers' efforts to maximise their bank's efficiency. By contrast, the IGH hypothesis (Marquez, 2002) proposes a negative relationship between competition and efficiency. Here competition among banks leads to a decline in their information-gathering capacity and increases the probability of adverse borrower selection and thus increases bank inefficiency. The final hypothesis considered here is the ESH (Demsetz, 1973; Smirlock, 1985) which proposes a positive relationship running from efficiency to market concentration (or bank competition).

The majority of banking studies have tested these hypotheses in the context of developed countries such as the US and European countries. By contrast few studies have examined these relationships within the context of developing economies. Moreover, the relationships between market concentration, bank competition and bank efficiency are considered separately in these studies with only a handful of studies investigating the effects of both concentration and competition on bank efficiency.

The emerging Asian banking structure changed significantly after the 1997 Asian crisis due to the rapid development in banking consolidations brought about by M&A. Generally banking services across emerging markets has experienced a significant increase in competition from the presence of foreign banks and privatisation. However current research examining the effects of market concentration and bank competition on bank efficiency in emerging Asian countries has not kept pace with these developments. To address this vacuum in the literature, this research examines the relationships between concentration, competition and X-efficiency across the six Asian countries during 2005–12.

In this research bank competition is estimated using two Lerner indices: the conventional and the efficiency-adjusted Lerner. Tobit regressions are then performed to examine the relationships between market concentration, bank competition and bank efficiency. In our empirical modelling we employ two-stage least squares (2SLS) to address endogeneity problems, which in turn avoids the associated bias due to the probability of causality running from bank efficiency to market concentration and bank competition.

This study makes three main contributions to the extant literature. First, previous studies have examined the market concentration–bank efficiency and bank competition–bank efficiency relationships separately. Our research develops five models that examine the relationships between market concentration and efficiency, bank competition and efficiency, and the relationship between market concentration, bank competition and bank efficiency across selected emerging Asian countries pre- and post-GFC. Secondly, we test for the QLH and the IGH hypothesis in these economies. Thirdly, this study investigates the relationship between market concentration, bank competition and bank efficiency both for the full sample of six countries, and separately for each country, and then suggests some recommendations to improve bank efficiency in these countries.

This paper is organised as follows: the next section reviews the relevant literature on the relationships between market concentration, bank competition and bank efficiency. Section two discusses the data and methodology. Section four presents the estimated results for X-efficiency along with an in-depth discussion about the effects of both market concentration and competition on X-efficiency. Finally section five provides a conclusion and some policy implications.

2. Market concentration, bank competition and bank efficiency: an overview

2.1. Related hypotheses

2.1.1. The efficient structure hypothesis

The Efficient Structure Hypothesis (ESH) proposed by Demsetz (1973) posits relationships between market concentration, competition and efficiency. This hypothesis states that efficient firms can lower costs of production and thus gain both higher profits and larger market shares. The ESH is supported by Smirlock's (1985) study on banking, which showed that concentration does not explain American banks' profitability. Market concentration is the result of leading banks' superior efficiency in gaining a higher market share. Efficient banks with comparative advantage in product can achieve a larger market share that results in higher market concentration levels. Therefore, the ESH proposes a positive influence of bank efficiency on concentration.

Moreover, Smirlock (1985) proposed that the most efficient banks can gain the larger market shares from other less efficient banks in the market. Thus, the market becomes more concentrated and banks can exploit greater market power and the greater the market power of banks, the less competition they face. As a result, the ESH posits a positive (negative) causality running from efficiency to market power (competition).

2.1.2. The quiet life hypothesis

The QLH was first suggested by Hicks (1935). In a first study on the link between efficiency and market structure, Hicks found that 'The best of all monopoly profits is the quiet life' (Hicks, 1935, p. 8). In other words, market power allows firms to enjoy a 'quiet life' (i.e. to have freedom from competition in a more relaxed environment), but such a life reduces firm managers' effort to maximise their firm efficiency.

Based on the pioneering study of Hicks (1935), Berger and Hannan (1998) were the first to study QLH in the banking industry. The authors suggested that managers can exercise market power of banks to gain supernormal profits without