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Does corporate governance play an important role in BHC performance? Evidence from the U.S.

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ABSTRACT

This study explores the relationship between the operating performance and corporate governance of bank holding companies (BHCs) in the U.S. The modified data envelopment analysis (DEA) is utilized to integrate the five rating indicators of CAMEL (Capital Adequacy, Asset Quality, Management, Earnings, and Liquidity) so as to estimate the BHCs' performance. This study also employs the modified tiered DEA to categorize 68 BHCs into three Tiers. Additionally, the truncated-regression is employed to discuss whether or not the corporate governance would affect the performance of BHCs. The empirical results present the trade-off relationship with CAMEL indicators in the Tier1—Efficient BHCs. Moreover, it has been found that there are negative impacts on BHC's performance from board size, outside directors, the average age of directors and CEO/Chairman duality, while there are positive impacts from the number of committee and Big-4 auditors. The results further prove that corporate governance is important for the operating performance of BHCs.

1. Introduction

Since the U.S. Internet Bubble burst in 2000, the U.S. government has been adjusting interest rates to solve the economic recession. During 2007, the "Sub-prime Mortgage Crisis" not only hit the U.S. real estate industry, but also triggered the global financial tsunami and an unsettled financial market. The Federal Deposit Insurance Corporation (FDIC) predicted that rate of bankruptcy in the U.S. banking sector would follow the financial loss rate and even speed up. Since 2007, bad debit and credit losses in the U.S. ' banking sector have amounted to more than 5 hundred billion dollars. Besides, the number of "Black-List Bank" has also increased more by 18% than in 2006, reaching to about 90 banks and amounting to total assets of 263 hundred million U.S. dollars. At the end of August, 2008, the FDIC announced the news that there were already 36 closed banks. This situation also makes the bank holding companies (BHCs) generate lower profits and is expected to write off even more and more assets and credit cost in the future.

During the recent decades, the U.S. banking sector has undergone a tremendous level of consolidation. In 1999, the U.S. Congress passed the Gramm–Leach–Bliley Act (GLBA),[2] and abolished the Glass–Steagall Act[3] that prohibited inter-bank sector to engage in the securities industry's norms and modified the rules of un-banking regulations. Under the new regulations, banks, securities, insurance companies, and other financial companies are merging in affiliations. The BHCs' setting was to show diversity in expanding the financial industry, and also reformed the global financial system. During the period of 1980–2003, the number of banks decreased by half from about 16,000 to 8,000, while the share of industry assets and deposits held by the top ten banks rose from 22% and 19%, to 46% and 41%, respectively. This pattern can be attributed to deregulation and technological advancement in the banking sector, which have enabled banks to provide a wider range of products and services to more customers across a greater geographical area.

Under the World Bank ranking, which is used as the gross profit in the foundation in 2006, the U.S. has the world's highest economic output. In 2008, the World Economic Forum published a Global Competitiveness Report, which pointed out that the U.S. continues to be

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[2] Gramm–Leach–Bliley Act (GLBA, also known as the Gramm–Leach–Bliley Financial Services Modernization Act) repealed part of the Glass–Steagall Act of 1933, opened up competition among banks, securities companies, and insurance companies.

[3] The second Glass–Steagall Act (GSA) was passed in 1933 with the purpose of separating the activities between investment and commercial banking, and collapsing a large portion of the American commercial banking system in early 1933. The related detail rules and interpretations are available at the following web site. http://www.fdic.gov/regulations/laws/rules/6000-100.html.

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the world's most competitive economic country during the Global Financial Crisis. Now that the U.S. is a top country in the world economy and its BHCs have constituted the diversified system, it was surprising that the financial crisis happened in the U.S. Therefore, this paper will examine the performance of BHCs in the U.S. It is essential to evaluate the operating performance of BHCs with insights into resource allocation and competitive advantage, as well as how BHCs help with strategic decision-making, especially regarding operational styles under an intense competitive environment.

The statistics of *Fortune* classified the reasons of enterprises defeat and poor performance as failure of corporate governance (Berger and Patti, 2006; Williams and Nguyen, 2005), change within the organization and lack of crisis consciousness. Shleifer and Vishny (1997) defined corporate governance as a firm that ensures funds are provided access to its return on investment approach. In other words, how to provide financial oversight and control over the management of its operating profits, while at the same time preventing the operation of the management of the funds from infringing the rights of the mechanism. At the Ministerial Conference in 1998, the Organization for Economic Cooperation and Development (OECD) emphasized the importance of "corporate governance", and the powers and responsibilities of the relevant parties, which includes the board of directors, shareholders and management of the sector. Thomson and Jain (2006) found that the largest financial services institution listed on the Australian stock exchange had losses which amounted to foreign currency options in 2004. According to the research that reiterates the importance of corporate governance for banks, the risk of loss resulted from inadequate or failed processes and people omission, since the foreign exchange debacle was classified as operational risk. As mentioned previously, corporate governance may be important to account for performance quality in the assessment of bank efficiency in the U.S. banking sector. This study regards corporate governance as an exogenous variable, and intends to explore whether or not it affects the BHCs' performance.

CAMEL (Capital Adequacy, Asset Quality, Management, Earnings, and Liquidity) has been used by the Federal Deposit Insurance Corporation and other previous studies (e.g., Berger et al., 2000; Otchere and Chan, 2003) to assess the performance of banks. However, the most criticized aspect of the uni-dimensional ratio analysis was that the choice of a single ratio did not provide enough information about the various performance dimensions of a bank. Even by considering many ratios, there still may be conflicting signals emerging from competing ratios (Al-Shammari and Salimi, 1998). This deficiency has prompted researchers to find new ways of addressing the issue of financial ratio analysis. One technique that has been used in recent years is a mathematical programming technique known as DEA (Brockett et al., 1997; Camanho and Dyson, 2005; Kao and Liu, 2004).

Several studies (e.g., Brockett et al., 1997; Camanho and Dyson, 2005; Kao and Liu, 2004) took modified radial DEA models to derive a composite performance index in which the outputs are a set of financial ratios with no specified inputs. In DEA models, non-zero input and output slacks are very likely to be presented after the radial efficiency score improvement. These non-zero slack values often represent a substantial amount of inefficiency. Therefore, in order to fully measure inefficiency in banking performance, it is very important to also consider inefficiency represented by the non-zero slacks in the radial DEA models. This study modifies a non-radial model to allow a full evaluation of inefficiency in a bank performance. By using a non-radial model, the study obtains a more appropriate performance for inefficient organizations.

To discuss whether or not exogenous factors would affect firms' performance, several studies (Aly et al., 1990; Drake et al., 2006; Ray, 1991; Shaoa and Lin, 2002; Stanton, 2002) used the Tobit regression to investigate the performance affected by exogenous factors. However, Simar and Wilson (2007) have demonstrated that the Tobit regression was inappropriate. Instead, they justified an approach based on a truncated-regression with a bootstrap, and illustrated its satisfactory performance. The new procedures are used in the research to bootstrap the DEA scores with a truncated regression and could solve more serious problems in all of the two-stage studies, which have already raised the fact that DEA efficiency estimates are serially correlated.

The purpose of this paper is to employ an innovative two-stage approach to analyze the relationship between BHCs performance and corporate governance. At the first-stage, the modified DEA model is used to integrate five components of CAMEL to estimate the BHCs performance. A Tiered DEA model (Barr et al., 1994; Morita et al., 2005; Seiford and Zhu, 2003; Swink et al., 2006) is employed to categorize BHCs into different performance Tiers. At the second-stage, the truncated-regression (Simar and Wilson, 2007) is utilized to examine whether or not the corporate governance affects the BHCs' performances.

The paper proceeds as follows: Section 2 presents the literature review. Section 3 describes the methodology. Section 4 discusses the sample and variables. Section 5 reports the empirical results. Finally, Section 6 presents the conclusions.

2. Literature review

In this section, we briefly review the BHCs' operating status and some of the literature research of the operating performance and corporate governance in banking.

2.1. BHCs' operating status

In 1956, the U.S. Congress established the Federal Bank Holding Company Act.[4] Furthermore, it passed the Bank Holding Company Act Amendments in 1970, which renewed the definition of the Bank Holding Company and set the standards of investment in non-banking businesses. The 1980s was a period of rapid development of internationalization and computerization in banking sectors. The biggest universal banks in Europe had the flexible operational advantages in risk management, which enabled the banks to process international securities business. Consequently, those European banks charged lower deposits. This development made the U.S. banking sector request the abolishment of GSA, because the GSA prohibited any institutions from acting as both investment and commercial banks, or as both banks and insurers. Until 1999, the U.S. legislature body endorsed the GLBA, the law which allows commercial and investment banks to consolidate, enhance the national competitiveness, and create a diversified framework in the banking sectors.

Following the Great Depression[5] burst, many banks were consequently forced into insolvency in the U.S. During the period of the 1980s and 1990s, the savings and loan crisis (S&L crisis) was the failure of savings and loan associations[6] due to the real estate market recession. In 2007, the "Sub-prime Mortgage Crisis" resulted in a large decline in capital, the bankruptcy of many banks, and caused the BHCs to write off more assets and credit costs. This episode compelled the five largest investment banks to face five options: merging into a BHC with their choice of banks, combining liabilities, going bankrupt, being taken over by other companies, or being bailed out by the U.S. government. However, the FDIC announced that 36 banks had been

[4] The Bank Holding Company Act specified that the Federal Reserve Board of Governors must approve the establishment of a bank holding company, and prohibited bank holding companies headquartered in one state from acquiring a bank in another state. The law was implemented in part to regulate and control banks that had formed bank holding companies in order to own both banking and non-banking businesses. The law generally prohibited a bank holding company from engaging in most non-banking activities or acquiring voting securities of certain companies that are not banks.

[5] The Great Depression was an economic slump in North America, Europe, and other industrialized areas of the world that began in 1929 and lasted until around 1939. The market crash marked the beginning of a decade of high unemployment, poverty, low profits, deflation, plunging farm incomes, and lost opportunities for economic growth and personal advancement. It was the longest and most severe depression ever experienced by the industrialized Western world.

[6] Savings and loan association (S&L association) is a financial institution in the US that accepts savings deposits and makes mortgage loans.