Journal of Banking & Finance 35 (2011) 2047–2055

Contents lists available at ScienceDirect

Journal of Banking & Finance

journal homepage: www.elsevier.com/locate/jbf

Explaining bank market-to-book ratios: Evidence from 2006 to 2009

Dan J. Jordan [a,*], Douglas Rice [b], Jacques Sanchez [c], Donald H. Wort [d]

[a] Dominican University of California, San Rafael, CA, USA
[b] Golden Gate University, San Francisco, CA, USA
[c] Bank of the West, Walnut Creek, CA, USA
[d] California State University, East Bay, Hayward, CA, USA

ARTICLE INFO

Article history:
Received 18 December 2009
Accepted 14 January 2011
Available online 26 January 2011

JEL classification:
G12
G21

Keywords:
Studies
Banks
Valuation
TARP
Market-to-book ratio

ABSTRACT

This paper examines the market-price to book-value ratio for 6604 bank stock observations from December 31, 2006 through June 30, 2009. We relate each bank's market-price to book-value ratio to several fundamental ratios and whether the bank took funds from the US Treasury under the Troubled Asset Relief Program (TARP). The results of this study show that banks who took TARP funds have lower market-price to book-value ratios. In addition, lower relative costs, higher non-interest income, and lower assets in non-accrual or foreclosed status are associated with higher market-price to book-value ratios while controlling for size and other bank attributes.

© 2011 Elsevier B.V. All rights reserved.

1. Introduction

The recent banking crisis has had a dramatic effect on the stock prices of banks of all shapes and sizes. From December 29, 2006 through March 31, 2009, the average bank stock declined by nearly 60%. In an attempt to restore confidence in the US banking system, Congress passed the Troubled Asset Relief Program (TARP) on October 3, 2008, and it was signed into law by President George W. Bush the same day. Early on, the US Government went to great pains to emphasize that only relatively strong institutions would be eligible to receive TARP funds. According to Dash (2008), "the criteria being used ... appears to be ... favoring those most likely to survive." Clearly, the government wanted to avoid branding TARP recipients as "bad banks" whose debt and equity would take a resultant hit in the marketplace. The Factsheet on Capital Purchase Program issued by the Department of the Treasury in 2008 states that the program goals are "to stabilize and strengthen the US financial system by increasing the capital base of an array of healthy, viable institutions, enabling them to lend to consumers and business." In order to avoid stigmatizing banks whose TARP applications were rejected, the application process was kept confidential. The Department of the Treasury announced only completed TARP transactions within two business days of execution. They did not announce which banks applied for TARP funds nor did they announce which banks were rejected.

This paper investigates the effect of receiving TARP funds on the stock prices of 283 publicly held TARP recipient banks. In addition, we examine 6604 quarterly observations of listed banks' market-price to book-value ratio and the following variables: (1) whether the bank holds TARP funds, (2) the bank's ratio of non-interest income to interest income, (3) the bank's percentage difference in Cost X-Efficiency compared to the best 2000 benchmark banks, (4) the bank's ratio of non-accrual assets plus owned real estate to total assets, and (5) the bank's ratio of Tier One capital to total assets. We perform our analysis while controlling for the sample banks' size deciles, whether they are part of a bank holding company, whether they are located in a "metropolitan statistical area" (MSA), whether they are a savings bank and which calendar quarter yielded the observation. We utilize the calendar quarter control to account for the general market-price declines of bank stocks over the most recent calendar quarters.

Variables (2)–(5) reflect the risks perceived by investors in the current market environment for bank stocks and Variable (1) measures the effectiveness of the TARP Program – a major purpose of this study.

* Corresponding author. Tel.: +1 415 381 3344; fax: +1 415 381 1743.
E-mail addresses: dan.jordan@dominican.edu (D.J. Jordan), doug@douglasrice.com (D. Rice), Jacques.Sanchez@bankofthewest.com (J. Sanchez), donald.wort@csueastbay.edu (D.H. Wort).

0378-4266/$ - see front matter © 2011 Elsevier B.V. All rights reserved.
doi:10.1016/j.jbankfin.2011.01.017

Numerous bank merger studies have related the merger purchase price paid to the target banks' fundamentals over various time periods. In addition, previous IPO studies have related stock offering prices to various financial fundamentals.

Our review of the literature shows that no studies have yet explored the 2008–2009 bank crisis time period relating bank market-price to book-value ratios and the taking of TARP funds and the other underlying bank fundamentals used herein. This study attempts to fill that gap in the literature.

This paper is organized as follows. First, a review of the relevant academic literature is performed. Next is hypothesis development, followed by a discussion of methods used in the study and the results. The paper concludes with a discussion of the implications of the study's findings for theory, practice, and future research.

2. Literature review

The lines of research that have a bearing on this paper include the following. First, there is the research investigating the relationship of the market-price to book-value ratio and various fundamental variables; Second, the research on which variables best represent how well a bank controls its costs; and Third, because there are three elements involved in the receipt of TARP funds, three related literature strands are investigated: (a) the effect of the issuance of stock options/warrants on common stock prices, (b) the effect of the issuance of preferred stock on common stock prices, and (c) the effect of government policy changes on common stock prices.

2.1. Market-price to book-value

Several studies find significant relationships between the market-price to book-value ratio and (1) profitability, growth, and loans as a percentage of earning assets (Hunter and Wall, 1989), (2) beta and growth forecasts (Harris and Marston, 1994), and net interest margin, bad debt expense, non-performing loans, bank efficiency ratios and several expense items (Yao and Liang, 2005).

Variaya et al. (1987) find that Tobin's q ratio and the market-price to book-value ratio are "empirically very similar measures of value creation" for 400 industrial firms examined from 1978 to 1983. Adam and Goyal (2007) compare the market-to-book assets ratio, a close cousin to Tobin's q, and the market-to-book equity ratio finding a correlation of 0.70 between the two measures for a sample of mining companies examined for their investment opportunity set. Tobin's q is defined as the ratio of the market value of a firm's assets (as measured by the market value of its outstanding stock and debt) to the replacement cost of the firm's assets (Tobin (1969)).

2.2. Cost efficiency

Early research that examined cost controls used simple cost ratios to measure cost efficiency. More recently, Berger's (2000) literature review defines Cost X-Efficiency as how close a firm's actual costs are to the costs of a best-practice firm producing the same outputs. Different studies use different methodologies to calculate Cost X-Efficiency. Berger and DeYoung (2001) use a Fourier-flexible cost function, DeYoung (1997) and Peristiani (1997) use a thick cost frontier methodology, Zellner's (1962) seemingly unrelated regression (SUR) technique, and a translog flexible cost function, Schure and Wagenvoort (1999) use a variation of the thick cost frontier methodology (the Recursive Thick Cost Approach) and a Cobb-Douglas cost function to calculate Cost X-Efficiency.

The use of dummy variables in SUR regressions is advocated by Karafiath (1988) who describes the following advantages of using dummy variables: (1) it is an appropriate solution to the problem of "event clustering" (because co-variances between the error terms are properly incorporated in cross-sectional *t*- and *F*-tests) and (2) a wide variety of hypotheses may be tested.

Similar to Peristiani (1997) and DeYoung (1997), we perform SUR regressions on quarterly data from the top two thousand banks in terms of cost per dollar of assets for our quarterly cost functions to arrive at benchmark bank coefficients that are then used to calculate comparable benchmark costs for each of our sample banks for each calendar quarter. Using the benchmark bank coefficients, we calculate sample bank percentages of the quarterly cost benchmarks for use as variables to test our hypotheses.

2.3. TARP elements

Because there are three elements involved in the receipt of TARP funds, three literature strands are investigated below: (1) the effect of the issuance of stock options/warrants on common stock prices, (2) the effect of the issuance of preferred stock on common stock prices, and (3) the effect of government policy changes on common stock prices.

2.3.1. Stock options/warrants

The issuance of stock options or warrants can have a positive effect on the underlying stock values due to enhanced information flow (Chern et al., 2008) or a negative effect due to increased dissemination of negative information (Sorescu, 2000). Galai and Schneller (1978) describe the positive effect from the "potential inflow of cash due to exercising of warrants" and the negative stock dilution effect. Ikaheimo et al. (2004), find a mean dilutive stock price effect of 3.66% for 90 companies in Finland.

With regards to the warrants issued under the TARP program, there have been three significant attempts at valuing certain warrants issued under the plan. The Congressional Oversight Panel (2009) commissioned an analysis as of February 6, 2009 of the initial ten large TARP recipient institutions by Duff & Phelps. As part of their assignment, Duff & Phelps value the Goldman Sachs Group, Inc. warrants at between $436 million and $558 million – approximately 4–5% of the total TARP funds received. Wilson (2009b) performs a valuation of the same warrants as of May 1, 2009, and arrives at a value of between $253 million and $1.196 billion with a middle value of $673 million.

Wilson (2009c) values the warrants repurchased by the first publicly traded bank – Old National Bancorp – and compares the result to the amount the bank actually was required to pay. His values range from a low of $1.5 million to a high of $6.9 million, with a middle estimate of $4.09 million. On May 11, 2009, Old National negotiated a price of $1.2 million to buy the warrants back from the US Treasury, 20% lower than Wilson's lowest value.

2.3.2. Preferred stock

Veronesi and Zingales (2008) analyze the effect of receiving TARP preferred stock on the stock prices of the first nine recipients. They calculate a subsidy from the US Treasury to the recipients in the range of $13–36 billion but find a decrease in equity value of $2.6 billion.

They suggest that the rest of the subsidy went to senior debtholders due to their senior position. Wilson and Wu (2009) also conclude that the government overpaid for the Goldman Sachs and Morgan Stanley preferred stock when compared to preferred stock issued in the open market around the same time period. Wilson (2009a) concludes that the issuance of preferred stock acts much like debt and contributes to the "debt overhang" effect on common stock prices. Coates and Scharfstein (2009) suggest that the issuance of preferred stock sends a negative signal about the bank's value, thus reducing the value of the bank's common stock.

Download English Version:

https://daneshyari.com/en/article/5089966

Download Persian Version:

https://daneshyari.com/article/5089966

Daneshyari.com