Journal of Financial Stability 18 (2015) 91–105

Contents lists available at ScienceDirect

Journal of Financial Stability

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

The Capital Purchase Program and subsequent bank SEOs☆

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ARTICLE INFO

Article history:
Received 7 October 2013
Received in revised form 27 March 2014
Accepted 14 January 2015
Available online 18 March 2015

Keywords:
Financial crisis
Banking crisis
SEO
CPP
Bank capital
Macroprudential regulation

ABSTRACT

We find that in the aftermath of the recent financial crisis banks replenished only 12% of crisis-related losses through SEOs in 2009 and 2010. However, SEOs are disproportionately conducted by Capital Purchase Program (CPP) recipients, and this is not explained by CPP recipients' economic and regulatory capital needs. SEOs in 2009 and 2010 by CPP recipients alone account for 27% by number, and 50% by dollar amount, of all SEOs by U.S. banks between 1994 and 2010, indicating the CPP is an influential event in the history of U.S. bank SEOs during this period. Controlling for economic and regulatory capital determinants of SEOs, CPP recipients were more likely than non-recipients to have a SEO within four quarters subsequent to CPP receipt. SEO proceeds were used to repay CPP receipts without jeopardizing loan growth. Banks that received CPP funds prior to the passage of the American Recovery and Reinvestment Act (ARRA), and banks with greater reliance on non-traditional banking activities, were more likely to have a SEO expeditiously and repay CPP funds early. Collectively, the results provide new evidence on the realized consequences of the CPP for bank SEOs. Tests suggest the CPP's indirect costs of restrictions on corporate policies and actions as the most likely explanation for the results.

1. Introduction

The financial crisis that began in 2007 was the most severe challenge to the stability of the U.S. banking and financial system since the 1930s. Estimates of crisis-related writedowns for U.S. banks totaled as much as $800b (IMF, 2010), indicating severe erosion of bank capital. As of the end of 2008, ten of the largest and systemically important U.S. bank holding companies (BHCs) alone needed replenishment of as much as $185b of capital, primarily in common equity (Board of Governors of the Federal Reserve, 2009). Ample common equity capital is vital to allow banks to maintain their financial intermediation function (e.g., Peek and Rosengren, 1997; Houston et al., 1997). Prolonged undercapitalization jeopardizes investment, output, employment, and other economic objectives as evidenced in Japan in the 1990s for example (Hoshi and Kashyap, 2010, 2011), and therefore, ensuring timely capital restoration is a key regulatory concern.

However, undercapitalized banks with impaired debt values are reluctant to voluntarily issue new common equity because a portion of the benefits of new equity are captured by creditors and claimants senior to common shareholders, while the existing shareholders' claim is diluted (Squam Lake Working Group, 2009; Coates and Scharfstein, 2009; Acharya et al., 2011). This is related to the debt overhang problem of Myers (1977). Banks appear to prefer to shore up capital levels through retained earnings in the long run, while retrenching loan growth in the short run, as noted in Japanese banks by Hoshi and Kashyap (2011). Consistent with this reluctance of undercapitalized banks to voluntarily issue equity, we find that seasoned common equity offerings (SEOs) from 2009 to 2010 (2008–2010) are used to replenish only 12% (18%) of U.S. banks' estimated $800b of crisis-related losses. The question we ask is, which banks have SEOs? In particular, were they more or less likely to have been prior recipients of the government's Capital Purchase Program (CPP)?

☆ Financial support for this paper was provided by the Dean's Research Grant and the Accounting Research Center (ARC) at Carlson. Helpful comments were received from seminar participants at UT-Dallas, Missouri, Minnesota Accounting and Finance brownbag, Minnesota Strategy brownbag, the 2011 Minnesota Accounting Research Conference, the 2011 Washington University St Louis Dopuch Conference, the 2012 Financial Intermediation Research Society conference, and from Philip Bond, Jeff Callen, Dan Collins, Rich Frankel, Chandra Kanodia, Anna Kovner, Jeffrey Ng, Raj Singh, Joe Weber and Andy Winton.

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http://dx.doi.org/10.1016/j.jfs.2015.01.006
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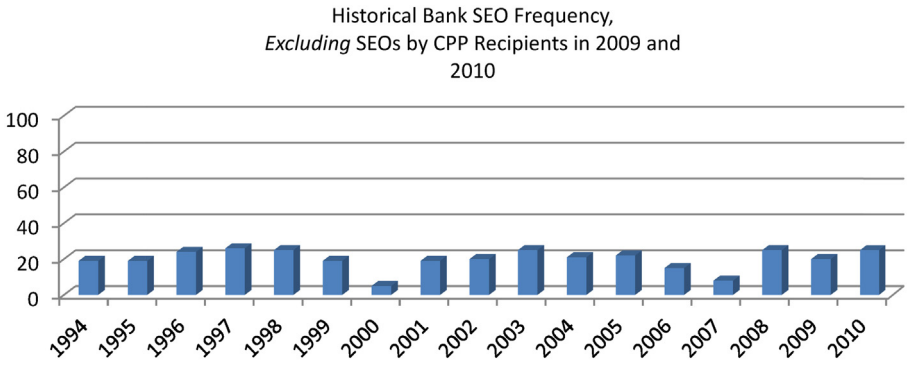

Fig. 1. The annual number of SEOs by U.S. banks between 1994 and 2010. The figure excludes SEOs by CPP recipients in 2009 and 2010, but includes SEOs by CPP non-recipients in 2009 and 2010.

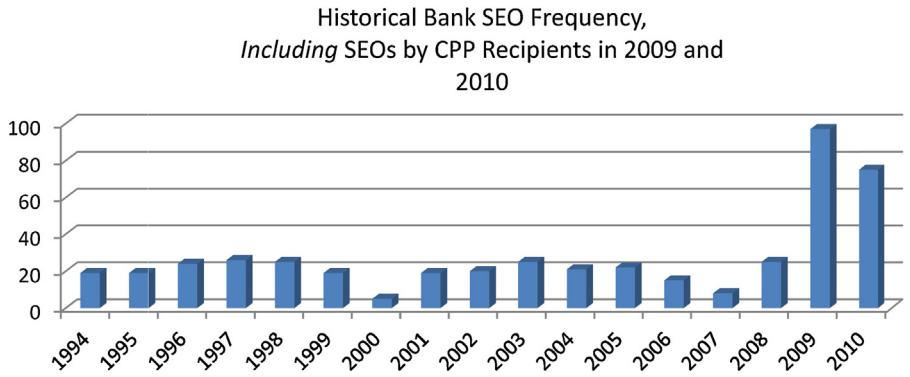

Fig. 2. The annual number of SEOs by U.S. banks between 1994 and 2010, including SEOs by both CPP recipients and non-recipients in 2009 and 2010.

We begin by documenting the disproportionate effect of CPP recipients on the historical bank SEO frequency. SEOs in 2009 and 2010 by CPP recipients account for 27% by number, and 50%[2] by dollar amount, of all SEOs by U.S. banks between 1994 and 2010. The annual number of bank SEOs between 1994 and 2010, including SEOs by CPP non-recipients in 2009 and 2010, exhibits remarkably little variation (Fig. 1). When we include SEOs by CPP recipients in 2009 and 2010 (Fig. 2), there is a striking break in the historical pattern, suggesting the CPP is an influential event in the recent history of U.S. bank SEOs.

To provide evidence in a multivariate setting, we examine whether CPP receipt significantly predicts SEO probability within the subsequent four quarters by estimating a logit regression of the SEO decision on past CPP funding, controlling for known economic and regulatory capital determinants of SEOs. Results indicate that CPP recipients have a significantly higher probability of a SEO in the subsequent four quarters, relative to non-recipients. To evaluate whether any potential selection bias in the CPP recipient sample explains this result, we use both a Heckman (1979) two-stage regression and a Propensity Score Matching (PSM) method. The result remains robust.

A question that follows is whether the purpose of the SEO by CPP recipients was to repay CPP funds. SEO proceeds did not necessarily have to be used for CPP repayment. They could be used to expand loan growth or other investments, acquire other banks, or simply to add more cushion to the firm's capital to ride out the period of uncertainty. To examine the relation between SEOs and CPP repayment, we test whether a SEO predicts the likelihood and amount of CPP repayment in the subsequent four quarters, controlling for other potential sources of repayment funds. Results indicate that CPP recipients that had a SEO were significantly more likely, relative to recipients without a SEO, to repay CPP funds in the four quarters subsequent to the SEO. This result is consistent with the findings in Wilson and Wu (2012).

Why are CPP recipients significantly more likely to have a SEO so quickly after CPP receipt? Why are SEO proceeds used to repay CPP funds so urgently? We identify three potential explanations:

(i) Recipients were attempting to escape CPP costs;
(ii) CPP recipients had an economic need for more capital; or
(iii) CPP recipients were attempting to take advantage of favorable market conditions for a SEO.

As discussed in detail in Section 3.4, only the first explanation is consistent with the totality of the results. CPP funds had both direct and indirect costs for BHCs. The direct costs of CPP funds included: (i) preferred equity dividends of 5% for the first five years, and 9% thereafter; and (ii) warrants worth 15% of the CPP infusion with exercise price equal to the average stock price in the twenty days preceding the infusion. As a point of comparison for the 5% preferred dividend, we find the average cost of new public debt with a five-year maturity for public banks in our sample during 2009 and 2010 is 5.38%.[3] The indirect costs of CPP funds included government restrictions on, for example, risk

[2] SEO dollar amounts from 1994 to 2010 were converted to 2008 dollars for comparison purposes using data from the U.S. Department of Labor, Bureau of Labor Statistics.

[3] Data obtained from Mergent-FISD. This is the before tax cost of debt. The after-tax cost is unclear if banks had losses and loss carry-forwards, in addition to other tax shields.