



Large capital infusions, investor reactions, and the return and risk-performance of financial institutions over the business cycle[☆]



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ABSTRACT

We examine investors' reactions to announcements of large capital infusions by U.S. financial institutions (FIs) from 2000 to 2009. These infusions include private market infusions (seasoned equity offerings (SEOs)) as well as injections of government capital under the Troubled Asset Relief Program (TARP). The sample period covers both business cycle expansions and contractions, and the recent financial crisis. We present evidence on the factors affecting FIs' decisions to raise capital, the determinants of investor reactions, and post-infusion risk-taking of the recipients, as well as a sample of matching FIs. Investors reacted negatively to the news of private market SEOs by FIs, both in the immediate term (e.g., the two days surrounding the announcement) and over the subsequent year, but positively to TARP injections. Reactions differed depending on the characteristics of the FIs, and the stage of the business cycle. Smaller, more financially constrained non-bank institutions were more likely to have raised capital through private market offerings during the period prior to TARP, and firms receiving a TARP injection tended to be riskier and more levered. In the case of TARP recipients, they appeared to finance an increase in credit risk with more stable financing sources such as core deposits, which lowered their liquidity risk. However, we find no evidence that banks' capital adequacy increased after the capital injections.

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1. Introduction

Proper functioning of a nation's capital markets to efficiently raise and allocate capital is an integral part of a healthy and growing economy. The importance of stable capital market dynamics was clearly demonstrated during the financial crisis of 2007–2009, one of the worst in U.S. history, when some markets stopped functioning and many of the largest financial institutions (FIs) around the world found themselves needing to raise a large amount of capital precisely when it was very difficult to do so.² To stabilize the

markets in the aftermath of this crisis, the U.S. government established the Troubled Asset Relief Program (TARP) to recapitalize the undercapitalized FIs. In addition, recent regulatory changes, including the Dodd–Frank Act, Basel III, and changes to the European Union capital rules, all underscore the important role of capital at FIs in promoting safe and sound business practices. Since a firm's decision to raise additional capital can alter its cash flows, growth prospects, and risk-taking incentives, it is important to understand how investors react when FIs issue large amounts of equity capital either through seasoned offerings in traditional capital markets or through non-market sources such as TARP injections.

We use event study and panel regression methods to investigate the immediate and longer term effects of the seasoned equity offering (SEO) or TARP injection announcements for a broad set of publicly traded FIs during 2000–2009. Our study is the first to investigate whether investor reactions to equity offerings by FIs are different over the expansion and contraction phases of the business cycle, compared to more normal economic conditions, and whether

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² Vice Chair of the Federal Reserve Board Janet Yellen (2009) has suggested that "if anyone ever needed a demonstration on the strength of the links between the functioning of the financial system and the functioning of the economy, then this is it. . . a genuine

crisis in financial markets has generated a severe credit crunch. The credit crunch in turn has left households and firms with fewer resources to finance spending, and as a result, output growth has weakened and unemployment has risen."

the reaction to U.S. government TARP injections is similar to that of market capital injections from private sector investors.

The reaction to market capital injections might differ during times of stress, such as the recent financial crisis, from that of ordinary times, because of the signal that risk-averse investors take from an announcement of raising capital at such a time. Similarly, reactions might vary in recessions versus expansions, especially if investors are risk-averse and their risk-aversion varies in tandem with economic conditions. Along the same lines, investors' reactions to a firm's decision to issue a large amount of equity capital may be sensitive to firm characteristics. Our study differs from Bayazitova and Shivdasani (2012), Black and Hazelwood (2010), and others who examine only the TARP program. In addition, unlike Krishnan et al. (2010), we include SEOs of FIs both prior to 2006 and after 2006. In particular, we study the impact of capital injections by all types of U.S. FIs (banks, securities brokers, insurers, money managers, etc.) over the 2000–2009 period on the receiving firms' systematic risk and risk-adjusted excess returns, as well as their post-injection risk-taking behavior related to lending, liquidity, leverage, and other key risk categories. Thus, our analysis shows how investors' perceptions about an FI's systematic risk and risk-taking activities changed post-SEO and post-TARP over an entire decade. Our approach, therefore, complements Bayazitova and Shivdasani's findings, which focus solely on investor reactions to an FI's decision to accept, reject, or repay TARP capital injections. In addition, we complement Krishnan et al. (2010) by providing empirical evidence that suggests investors not only understand "opaque" FIs but also can do so across varying market conditions during a business cycle.

The literature suggests that firms can experience several advantages and disadvantages by raising capital via SEOs. The announcement of an SEO can be viewed as positive news because the firm will then be able to use the funds to exploit new business opportunities and the market may perceive these opportunities as the reason for the issuance. Moreover, the additional equity can bolster the issuing firm's capital position (reduce its financial leverage) and, thereby, mollify regulators. To the extent that investors value this reduction in risk and/or perceive that the FI will have stronger growth prospects, the firm's stock price can react positively to the announcement of an SEO.

However, SEOs can also be perceived as negative news. Myers and Majluf (1984) were the first to note that there is an adverse selection problem associated with SEOs and, thus, it is possible that SEO announcements send a negative signal about the firm's future prospects. Specifically, when there is a large informational asymmetry between insiders and external investors, firm managers with positive private information on their investment opportunities may refrain from issuing new equity, preferring to use internal financing to fund investment in positive net-present-value projects. This is because the new equity issues will be underpriced, as they will not fully reflect the managers' private information about the good investment opportunities.

On the other hand, if the managers have negative inside information and the firm is overvalued, they will tend to issue new equity. Similarly, if investors perceive that bank regulators have inside information based on bank examinations and surveillance, then if they see regulators forcing a bank to issue new capital, they would take this as a signal that the bank is in distress. In addition, a Myers (1977)-type debt overhang problem might exist if the capital injection is senior to existing shareholders (as was the case with the TARP investments). Thus, existing shareholders might not benefit from this type of capital injection even though it may be advantageous to existing creditors, thus creating an under-investment problem. In these scenarios, issuing equity could be interpreted as bad news (or less good news), compared with not issuing equity.

The reaction to a TARP injection may also be positive or negative. All else equal, receiving a government injection might be perceived as a negative signal if it is interpreted as an indication of undisclosed financial distress and excessively diluted shares of existing shareholders. However, in a very poor economic environment in which investors expect many firms to fail, receiving government funding could be interpreted as positive news because it might be seen as a "vote of confidence" in the FI's prospects by the government. Alternatively, for large firms, such a capital injection could be seen as a sign that the firm is "too-big-to-fail" and, therefore, that it would receive a government-led rescue, if needed. This would be a positive from the investors' viewpoint. It could also be seen as positive news to the extent that the TARP injection was perceived as a funding source for new profitable projects. So the reaction to TARP injections may be positive to the extent that the market views the injection as an indication of better prospects for the firm going forward.³

Thus, raising new equity, whether through a private market SEO or via a TARP injection, can have advantages and disadvantages. Although some earlier studies have found negative investor reaction to bank SEOs, whether the advantages outweigh the disadvantages is still an important empirical question and one we address in this paper.⁴

Our main findings are as follows: (1) Investors' reaction to market issuances differs from their reaction to TARP injections. On average, investors reacted *negatively* to the news of market SEO announcements in the short term (i.e., in the two days surrounding the announcement) and over the subsequent year. This result is similar to those in some earlier studies that have found negative investor reaction to bank SEOs. In contrast, we find that investors reacted *positively* to the news of a TARP injection.

In terms of magnitude, the cumulative abnormal returns over days 0 and +1 for issuers were –57 to –60 basis points (bps) in market SEO events and +100 to +123 bps in TARP events. For TARP issuers, the risk-adjusted excess return (measured by the alpha from a market model regression) was significantly lower and the systematic risk (market beta) was significantly higher in the year after injections than in the year before. For market issuances, the

³ Ng et al. (2010) find evidence that healthier banks were selected to be participants in TARP's Capital Purchase Program. In addition, Bayazitova and Shivdasani (2012) confirm Ng et al.'s finding and report positive initial investor reactions to TARP announcements. Gasparro and Pagano (2010) find that another class of long-term investors, namely, sovereign wealth funds, can have important positive and negative effects on a firm's equity value owing to the potentially stabilizing and destabilizing effects of this unique type of long-term, quasi-government investment firm.

⁴ Other than the more recent analysis of bank SEOs by Krishnan et al. (2010) noted above, most studies of investor reaction to SEOs by commercial banks have focused mainly on short-term announcement effects using small samples of firms and relatively brief time periods (typically fewer than 100 firms and fewer than 10 years of data). These studies usually find either negative or, at times, insignificant short-term abnormal returns in response to SEO announcements, with the magnitude of the effect varying based on the level of the bank's capital adequacy (leverage), as well as on whether the bank is a repetitive SEO issuer (see, e.g., Polonchek et al., 1989; Keeley, 1989; Slovin et al., 1991; Cornett and Tehranian, 1994). Slovin et al. (1992) suggest that there are also negative contagion effects on rival commercial and investment banks when money center banks issue SEOs. Further, Slovin et al. (1999) find a similar negative contagion effect when large banks cut or omit dividend payments. More recently, Kim and Stock (2012) examine the effect of TARP preferred stock issuances on pre-existing preferred stocks and find a positive short-term reaction. Veronesi and Zingales (2010) estimate that TARP helped enhance the value of the three largest investment banks and Citigroup by reducing the likelihood of bankruptcy for these firms relative to other competitors such as J.P. Morgan Chase. In addition, King (2010) uses credit default swap (CDS) spreads and shows that government support of 52 banks in six countries during the 2008 crisis helped creditors at the expense of shareholders (because CDS spreads fell while bank stock prices briefly responded positively before continuing to decline in all countries except the U.S.).

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