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Default risk and equity prices in the U.S. banking sector: Regime switching effects of regulatory changes[☆]

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A R T I C L E   I N F O

A B S T R A C T

We explore the link between the default risk and equity prices for the U.S. aggregate banking sector over the last 30 years using a regime switching methodology which allows for changes in regulation and the recent financial crisis. We reveal that the default risk exercises a causal effect on the equity price index during the high risk regime. This is found to prevail over the periods prior to the enactment of Prompt Corrective Action (PCA) (1984–1992) and from the start of the crisis until the introduction of the Troubled Asset Relief Programme (TARP) (late 2007–2008). This effect is attributed to bank dividends. During the period from the introduction of PCA until the outburst of the crisis (1992–late 2007) and during the post TARP period (2009–2011), there is no default risk effect on equity prices. PCA and TARP have altered the default risk – equity prices relation by eliminating the impact of dividends on default risk. These results are relevant to the ongoing discussion on the effectiveness of PCA, and to Basel III.

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1. Introduction

Default risk, namely the risk of a firm failing to service its debt obligations, has recently attracted significant attention, especially in the banking sector following the recent financial crisis. A strand of

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literature has focused on the effect of default risk on equity prices and has reached mixed conclusions. Early studies measured default risk using the spread between long-term BAA corporate bonds and Treasury bonds and found that this spread can explain equity returns. These studies include Longstaff and Schwartz (1995) for the period 1977–1992, and Duffee (1999) for the period 1985–1995. However, Elton et al. (2001), using bond spreads data for the period 1987–1996, have shown that this spread is unrelated to default risk. Vassalou and Xing (2004) estimated default likelihood indicators for U.S. firms over the period 1971–1999, and found a significant default risk effect related to the size and book-to-market (BM) characteristics of the firm. In contrast, Garlappi et al. (2008), considering nonfinancial U.S. firms for the period 1969–2003, documented that higher default probabilities are not associated with expected returns. Recently, Charitou et al. (2011), focusing on U.S. firms that increased or initiated dividend payments over the period 1986–2008, added another strand of literature to the default risk – equity prices relation by showing that dividends may affect this relation. This finding is very important, and is associated with the literature on dividends and firm risks. Research by Pastor and Veronesi (2003) and Bartram et al. (2012) has empirically documented a strong linkage between dividends and risk. In addition, a survey study by Brav et al. (2005) has found that managers tend to believe that there is a causal relation between these variables.

The present study explores the linkage between default risk – equity prices and the dividend-driven effects on this relation for the U.S. banking sector which has experienced significant regulatory changes over the last 20 years. In 1991, the U.S. Congress passed the Federal Deposit Insurance Corporation Improvement Act (FDICIA) emphasising the role of capital ratios in diagnosing safety problems in banking. One of the major features of FDICIA was the introduction of Prompt Corrective Action (PCA), a new statutory framework for bank supervision that detailed early intervention and corrective action by bank regulators in dealing with troubled institutions. Previous work assessing the impact of PCA on bank default risk is contradictory and somewhat limited. Adamati et al. (2011) and Calomiris (2011) argued that regulators can rely on capital requirements as an instrument for reducing default risk, implying that PCA will be effective in reducing such risks. Kahane (1977) and Blum (1999), however, suggested that capital requirements may increase default risk. This is because regulatory standards (such as PCA) cause risk and leverage to become substitutes and as regulators impose tougher capital requirements banks respond by choosing assets with more risk. John et al. (2000) also argued that a PCA-based system has limited effectiveness in curbing risks (even for the best capitalised banks). It is also important to note that the remit of the FDIC only extended to those institutions which held banking licenses. Many systemically important financial institutions (including Lehman Brothers, Fannie Mae and Freddie Mac) were therefore not subject to the PCA provisions, and this explains why PCA had a limited role in dealing with the 2007–08 crisis. The inability of previous capital regulation to deal with systemic bank failure has resulted in various ongoing initiatives, such as Basel III, to bolster banks capital strength. Finally, in terms of the link between risk and equity returns, Akhigbe and Whyte (2001) have found that FDICIA's passage resulted in a significant decline in bank risk.

On October 2008, the U.S. Treasury introduced the Troubled Asset Relief Programme (TARP) in order to recapitalise financial institutions by purchasing equity and other assets. It was the first programme in U.S. history that made government fund injections into private banks and is the largest government bailout in U.S. history.[1] TARP was conceived in response to the turmoil that followed the collapse of Lehman Brothers and the government rescue of AIG in mid September 2008. It authorised spending of $700 billion that would be implemented in two stages of $350 billion each. In the first stage, the U.S. Treasury would invest in equity of financial institutions. In the second stage, funds would be allocated for purchases of preferred stock of U.S. financial institutions (Bayazitova and Shivdazani, 2012). The primary expectation was that TARP would increase bank lending and stabilise the banking system by managing bank default risk (Black and Hazelwood, 2013). However, TARP could create moral hazard as this sort of bailout could feed expectations about similar actions in the future. It is by no means clear what the longer term influence TARP will be on banking risks (Bayazitova and Shivdazani, 2012), although we know these actions went some way to avert a system wide banking sector collapse.

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[1] Calomiris (2011), Kanas (2013, 2014) and Bayazitova and Shivdazani (2012).