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# Dissecting the bond profitability premium ☆

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ABSTRACT

In contrast to prior equity market results, we document that corporate bonds issued by low profitability firms outperform bonds issued by highly profitable firms. This performance difference is primarily driven by low profitability, low credit rating firms. This profitability premium is consistent with compensation for default risk and can be explained by default risk factors that include speculative-grade bonds. The impact of profitability on equity returns depends on the relative importance of default risk and the risk of the firm's investments when solvent, consistent with higher profitability signaling both lower future distress and riskier investments resulting in higher discount rates.
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## 1. Introduction

How (and why) are bond and stock returns affected by firm profitability? Evidence suggests that profitability positively predicts future equity returns. In the bond market, results show that profitability has a negative effect on returns. This effect is stronger among speculative-grade bonds and

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could convey information about default risk (negatively affecting CDS spreads), but is also found to be robust to factor models that include a default factor. While many researchers have examined this anomaly, particularly as it relates to equity markets, little consensus has been reached on the underlying reason for these results. We help to fill this gap by examining the profitability-bond return relation in an attempt to determine its underlying drivers and explain why the impact of profitability appears to differ between the credit and equity markets.

We find evidence that positive profitability reduces firms' default risk and may decrease leverage and increase firm liquidity, justifying lower discount rates. Supporting this, we show that high (low) profitability bond portfolios have low (high) default betas and the bond profitability premium is largely due to default risk factors that include high-risk bonds. We further document that default risk is relevant to equity holders, but cannot fully explain the profitability anomaly in equity returns, likely due to other discount rate information contained in firm profitability. Our results suggest that the opposite effects of profitability on the returns to debt and equity could be driven by differing sensitivities to default risk and the riskiness of the firm's investments when the firm is solvent.

The extant literature examining equity markets shows that profitability is typically positively related to future stock returns (Haugen and Baker, 1996; Piotroski, 2000; Fama and French, 2006, 2008; Balakrishnan, Bartov, and Faurel, 2010; Chen, Novy-Marx, and Zhang, 2011; Stambaugh, Yu, and Yuan, 2012; NovyMarx, 2013). In bond markets, the opposite effect has been reported. In recent work, some researchers suggest that bonds of highly profitable companies may underperform on average (Chichernea, Petkevich, and Wang, 2015; Crawford, Perotti, Price, and Skousen, 2014; Chordia, Goyal, Nozawa, Subrahmanyam, and Tong, 2015), while others have shown that bondholders react positively to earnings news and annual bond returns are positively related to earnings (Easton, Monahan, and Vasari, 2009). Shivakumar, Urcan, Vasvari, and Zhang (2011) find that CDS spreads are negatively related to profitability, particularly when the firm has a low distance to default, suggesting that profitability contains information regarding default risk; however, this does not appear to explain the observed profitability-return relation, particularly among speculative-grade bonds (Crawford, Perotti, Price, and Skousen, 2014; Chordia, Goyal, Nozawa, Subrahmanyam, and Tong, 2015). This is particularly surprising given that a strong relation has been found between profitability and default risk (Altman, 1968; Titman and Wessels, 1988; Rajan and Zingales, 1995; Fama, 1998; Fama and French, 2002).

A possible confounding effect is that profitability may also contain information about the riskiness of the firm's future cash flows even when the firm remains solvent (Chen, Novy-Marx, and Zhang, 2011). While this might explain the profitability effect in the equity market, it is inconsistent with an opposite result in bond markets, as the earnings-related information is predicted to have a similar effect on debt and equity returns (Lok and Richardson, 2011). One potential explanation for these seemingly conflicting results is the relative importance of default risk and risk from the variability of cash flows when the firm is solvent. Bond holders are likely to be primarily concerned with downside risk (i.e., default risk), as the cash flows paid to bondholders are constant as long as the firm does not default. Thus, a connection between profitability, default risk, and bond returns could explain the profitability anomaly in the bond market. Unlike bondholders, equity holders are the residual claimants on the firm's cash flows and thus face both upside and downside risk related to the firm's profitability. While both bond and equity holders lose value when the firm defaults, equity holders capture any profits greater than the required payments to debt when the firm is solvent. Thus, equity holders are likely concerned with both the upside potential of highly profitable firms and the distress risk posed by less profitable firms. The positive impact of profitability on stock returns could indicate that the effect of investment risk when the firm is solvent dominates the default risk effect for the average stock. As such, default risk should have implications for the profitability anomaly in both the bond and stock markets, and is a highly plausible driver of a portion of the returns to profitability hedge portfolios.

We start our analysis by showing that the bonds issued by low profitability companies generate higher future returns on average. Specifically, firms in the lowest (highest) ROA quintile generate 70 (44) bps per month, leading to an ROA premium[3] of approximately 25 bps (*t*-statistic of 4.04). The

[3] We define the ROA premium as the difference between the performance of low (ROA1) and high profitability (ROA5) firms.

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