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Does return dispersion explain the accrual and investment anomalies?☆

Doina C. Chichernea, Anthony D. Holder*, Alex Petkevich

College of Business and Innovation, University of Toledo, Mail Stop 103, 2801 W. Bancroft St., Toledo, OH 43606-3390, USA

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ABSTRACT

Recent research shows that high return dispersion (RD) is associated with economic conditions characterized by high discount rates, which are not conducive to growth and investment. We propose that RD risk can explain the accrual and investment anomalies. We conduct asset-pricing tests that include RD as a potential risk factor and show that low-accrual and low-investment firms have significantly higher exposure to the risk captured by RD. RD significantly explains future returns and the excess returns to accrual and investment hedge portfolios shrink in magnitude and become insignificant during periods of low RD. We conclude that risk explains the accrual and investment anomalies.

1. Introduction

The accrual anomaly is one of the most long-standing asset-pricing anomalies [see Kothari (2001) and Richardson et al. (2010) for comprehensive reviews of the phenomenon]. Since Sloan (1996) first documented abnormally low (high) stock returns for high-accrual (low-accrual) stocks, the literature has sought to explain the accrual anomaly and its pervasiveness.[1] While some argue that it went away in the years leading up to the financial crisis triggered in 2008 (Green et al., 2011), its subsequent reappearance has reopened the debate about its underlying source. Two main competing explanations have been put forth: (1) investors fixate on bottom-line earnings and do not understand how the persistence of the cash flow and accrual components differs (Sloan, 1996; Richardson et al., 2005) and (2) accruals matter because they capture investment and growth information, which can affect returns because of a general growth mispricing effect (Fairfield et al., 2003) or because of rational risk pricing (Khan, 2008; Wu et al., 2010). Disentangling a mispricing effect from risk pricing in

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* Corresponding author. Tel.: +1 419 530 2560.
E-mail addresses: doina.chichernea@utoledo.edu (D.C. Chichernea), anthony.holder@utoledo.edu (A.D. Holder), alexey.petkevich@utoledo.edu (A. Petkevich).
[1] The accrual anomaly is one of the most robust anomalies documented to date. Fama and French (2008) identify it as one of the anomalies that they cannot explain, persistent in all size groups and using both sorts and regression analyses. Avramov et al. (2013) highlight it as the only exception in their list of anomalies that is robust among high and low credit risk firms in all credit conditions.

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the context of the accrual anomaly is difficult and remains an open debate (Lewellen, 2010), especially given the fact that the firm-level investment and accrual measures are intrinsically correlated (Richardson et al., 2010).

We contribute to this debate by providing a risk-based explanation for both the accrual and investment anomalies. We show that the profitability of the accrual and investment strategies varies systematically over time and that this variation is significantly related to cross-sectional return dispersion (RD), which is a macroeconomic variable linked with other growth-related anomalies. Low-accrual and low-investment portfolios carry a positive risk premium as compensation for RD risk and after 2008, as RD increases, profits from the accrual and investment strategies regain significance. Our results support the notion that accruals contain fundamental investment and growth information and that returns to both the accrual and investment strategies are consistent with rational risk pricing.

The link between RD, aggregate states of the economy, and stock returns has been formally established by models proposed by Gomes et al. (2003) and Zhang (2005). These models predict that RD can be a useful macroeconomic state variable, as it contains information related to general investing conditions faced by firms. High RD periods indicate economic states with higher discount rates, which are not conducive to investment or growth. Jiang (2010) shows, theoretically, that RD is priced in the cross section and argues that the variable captures risk associated with aggregate economic growth and fundamental economic restructuring. Empirical literature provides evidence that RD indicates general macroeconomic conditions and that it is a useful proxy for growth and restructuring-related risk.[2]

If RD efficiently reveals macroeconomic states with high growth-related risks and accruals reflect growth information, then we expect that periods of higher (lower) RD correspond to higher (lower) returns from an accrual-based strategy. Furthermore, we expect that RD explains the time series variation in the profitability of an investment-based strategy, which is exposed to the same type of growth-related risks. Therefore, we hypothesize that both strategies are driven by the same macroeconomic conditions, which can be captured by RD. Empirically, our proposition implies that low-accrual and low-investment firms have higher exposure to RD risk and, thus, generate higher expected returns as a compensation for this risk. We further hypothesize that the profitability of these strategies is time varying and positively correlated with RD. Our results support both of these hypotheses.

Our analysis begins by examining the performance of hedge accrual and investment portfolios (low minus high quintiles). For the entire sample period (1965–2011), the accrual and investment strategies produce annualized raw returns of 7.34% and 12.93%, respectively. Consistent with Green et al. (2011), returns from the accrual strategy peak prior to 1995 (when Sloan first documented the anomaly), partly dissipate from 1996 to 2003, and then become essentially zero between 2004 and 2008. However, when the sample is extended to between 2009 and 2011, significant positive returns reappear. Subsample analysis reveals that the investment strategy exhibits very similar behavior. The reappearance of the accrual and investment anomalies after 2008, when RD has significantly increased, is consistent with our proposed explanation.

We confirm that RD indicates risk by showing that it is significantly priced in the cross section of individual stock returns. Using a two-stage Fama and MacBeth (1973) procedure, we find that RD carries a positive and significant premium under different model specifications. Furthermore, RD is positively priced among the accrual and investment portfolios in the cross section, which is consistent with the idea that low-accrual and low-investment portfolios have significantly higher exposure to the risk captured by RD.

We further examine whether RD can explain the time series variation in the profitability of the accrual and investment strategies. First, we show that accrual and investment hedge portfolios have significant exposure to RD, meaning that low- (high-) accrual and investment portfolios have significantly higher (lower) RD loadings. Specifically, a 1% increase in return dispersion generates a 7.7 basis points increase in the returns of the accrual hedge portfolio and a 12 basis points increase in the investment hedge portfolio. To put this into perspective, the average return of the accrual (investment) hedge portfolio over our sample period is 57 (100) basis points per month. In the presence of RD, the intercepts for the accrual hedge portfolio become insignificant, and for the investment hedge portfolio, they substantially shrink. The explanatory power of RD is not subsumed by other commonly used macroeconomic variables, such as dividend yield, term spread, default spread, and short-term interest rates.

Second, we quantify the economic significance of the RD effect for raw and risk-adjusted returns by documenting the incremental magnitude of the accrual and investment strategies during economic states of high RD. The accrual premium is almost five times higher during states with high RD. The investment premium produces 1.37% per month during high return dispersion states and essentially zero if return dispersion is low. The differences between the risk-adjusted returns present approximately the same magnitudes.

Documenting a significant relation between RD and the accrual and investment anomalies offers at least two distinct contributions to the literature. First, the interpretation of results showing a link between the accrual and investment anomalies is subject to intense debate. For example, Wu et al. (2010) argue that the q-theory (e.g., Tobin, 1969) provides a risk-based explanation for the accrual anomaly, suggesting that its driving force is real investment. However, Richardson et al. (2010) dispute these findings, noting that investment and accruals are mechanically correlated and, thus, that the investment proxy proposed by Wu et al. (2010) cannot be used to explain the accrual anomaly.[3] Our approach of using a

[2] RD is related to unemployment rates (Loungani et al., 1990), business cycles (Christie and Huang, 1994), momentum (Connolly and Stivers, 2003), turnover and macroeconomic news (Connolly and Stivers, 2006), and risk associated with fundamental restructuring (Demirer and Jategaonkar, 2013).

[3] Richardson et al. (2005) make the point that the link between accruals and growth/investment by itself is not sufficient to distinguish between mispricing and risk-based explanations. For example, on the one hand, papers such as Fairfield et al. (2003), Bradshaw et al. (2006), and Dechow et al.