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U.S. corporate bond returns: A study of market anomalies based on broad industry groups $\stackrel{\sim}{\sim}$

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Abstract

We examine three major U.S. corporate bond market indices for calendar-based anomalies over the period 1982–2002. The analysis covers the entire corporate bond market and two broad industry classes: industrials and utilities. We find mixed support for the weekend effect in the overall bond index and the industrials index and to a lesser extent in the utilities index. We also show strong evidence of a January effect. This paper not only updates the study of corporate bond market anomalies through the period 2002 but also is the first examination based on broad industry classes.

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1. Introduction

Over the past three decades numerous studies have shown that there exists a "weekend effect" in the stock market and several other markets wherein Monday returns tend to be significantly negative when compared with returns of other days of the week. Recent studies of Brusa, Liu, and Schulman (2000) and Mehdian and Perry (2001) show that there is a reversal in this effect whereby Monday returns in the U.S. stock markets tend to be positive and greater than other days' returns after 1988. Evidence is also provided in further studies by Brusa, Liu, and Schulman (2003a) that this "reverse weekend effect" is a unique feature of the U.S. stock market. They show that, while the U.S. stock market shows a reverse weekend effect, foreign markets show a traditional weekend effect or no effect at all. In another work, Brusa, Liu, and Schulman (2003b) show that the reverse weekend effect exists not only in broad indices but also in most industries. They find that Monday returns tend to be positive in the post-1988 period for both broad market indices and industry indices. Their conclusions are valid even after considering the influence of the month-of-the-year and week-of-the-month effects.

In the present study, we examine whether there exists a reverse weekend effect in the U.S. corporate bond market. We also examine for industry effects based on two major industry groupings, industrials and utilities, and check for the month-of-the-year and week-of-the-month effects. Our motivation stems from the fact that, soon after the existence of the original weekend effect was found in stock markets, it was found that other markets appeared to be affected in the same way. Based on this reasoning, there is a possibility that U.S. bond markets also exhibit a reverse weekend effect like the stock markets. In this study, three separate bond indices are examined. While there appears to be no weekend effect in the bond returns based on the model developed by French (1980), we find that Monday returns in the post-1987 period are significantly less than the average returns for the rest of the week based on the model developed by Connolly (1989). We also find evidence of the turn-of-the-year effect in bond returns. While there appears not to be enough significant difference between industries to draw any important inferences, some effects appear to be isolated based on industry.

Seasonal patterns like the day-of-the-week effect and week-of-the-month effect have been found in long-term debt markets.² Some of the major studies have examined the impact of seasonalities in the bond markets. Schneeweis and Woolridge (1979) examine the existence of seasonality in U.S. monthly bond holding period returns over the period 1952–1977. Using both parametric and non-parametric tests they find significant differences in the mean returns by month of the year. They report high rates of return in January and October and also report a shift in the later years of their sample period. Using data over the years 1963 through 1982, Chang and Pinegar (1986) document a January seasonal in the U.S. market for corporate bonds that becomes more evident as the bond rating declines. Smirlock (1985) examines the January effect in a variety of debt instruments over the period 1953–1981. He reports seasonality in low-grade debt instruments in that they produce substantially higher returns in January than in any other month. This was not the case with Treasuries and high-grade corporate bonds.

Flannery and Protopapadakis (1988) examined intra-week seasonality in three stock indices and Treasury bonds with seven different maturities. They report that significant intra-week seasonalities exist in Treasury returns as well as stocks. They show that return seasonals are not uniform across securities, and they also show that negative Monday returns may be subject to a unified explanation across all securities. Jordan and Jordan (1991) show that, for the period of 1963–1986, corporate bond returns

 $^{^{2}}$ A list of all studies on the Monday effect is beyond the scope of this study. For a good recent review of the literature on seasonalities please refer to Pettengill (2003).

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