



Do rating grades convey important information: German evidence?☆☆☆



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ABSTRACT

In this paper we investigate the impact of credit rating changes on German stock market. We evaluate daily abnormal stock returns of companies listed on the Frankfurt Stock Exchange (HDAX). Rating upgrades and downgrades are made by three rating agencies: Moody's, Standard and Poor's, and Fitch Ratings. We find that rating announcements are largely anticipated, i.e. German market adjusts stock prices long before the rating changes have been made. Additionally, we report that the market, along with anticipating the rating change, reacts stronger to downgrades compared to upgrades.

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1. Introduction

Investment decisions are challenging due to high costs and time required to analyse projects. As a result, rating announcements are treated as signals which stem from informational asymmetry existing between debt issuers and investors. Therefore, credit ratings are decisive to market agents during their decision process. For example, institutional investors distinguish between investment and non-investment grade ratings as it is essential when considering investment portfolios. Financial intermediaries use credit ratings to set lending interest rates and to control the level of required capital. Hence, the ratings made by credit agencies have significant impact on the rating issuers.

However, do changes in credit ratings convey important information to the market? In this paper we attempt to answer this question. To do this we examine ratings for informational content in the German market during the recent financial crisis. Specifically, we investigate the price impact of upgrades and downgrades made by three agencies—Moody's Investors Service, Standard & Poor's and Fitch Ratings. The data are daily stock prices of companies listed on the Frankfurt Stock Exchange. It is divided into two periods: pre-crisis (2002–2007) and post-crisis (2009–2015). We intentionally exclude 2008 because there was a decline in the global stock market with capital injections and government bailouts which could contaminate our data.

The decision on the Frankfurt Stock Exchange is based on liquidity and intensity of trading. It is a large stock exchange with high turnover

velocity in its premium segments. Thus, it fits our required criteria. There are previous research focusing on German market, for example on stock performance after inclusion in Dow Jones sustainability index (Oberndorfer et al, 2013), short-term stock overreaction, (Lobe and Rieks, 2011) and credit ratings as a measure of innovation (Czarnitzki and Kraft, 2004). However, to the best of our knowledge there is no research on HDAX stocks reaction to rating upgrades and downgrades. Studies investigating rating changes concentrate either on stocks of financial industries or banks, or in case of Dichev and Piotroski (2001) on the US bond market.

To calculate the impact of rating announcements on stock returns we use the event study methodology. We define an event date as a public announcement of rating change by rating agencies and examining an event window. In this paper the event window starts 60 business days prior a rating announcement and ends 20 business days after the announcement. Decision on 60 pre-event days is based on the fact that rating agencies usually act upon material information and announce an actual downgrade following a negative review within three months. We use paired samples test for significance of the mean difference between cumulative abnormal returns and cumulative normal returns. Hence, rating changes convey important information if the event dates indicate significant market reaction.

The remainder of the paper organized as follows. Literature review is given in Section 2. Section 3 presents methodology employed in the paper. In Section 4 we present data description and sampling procedures. Empirical findings are given in Section 5. The final section concludes.

2. Literature review

Rating agencies have a privileged access to confidential information. Companies are reluctant to reveal private information to the public, even positive ones (e.g. R&D projects), to prevent competitors from

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obtaining sensitive information. However, they share confidential information with rating analysts who incorporate it into the rating assessments. By doing so, companies indirectly communicate important information through credit rating to the market participants. Additionally, according to Calvo and Mendoza (2000), high costs of generating new information make market agents rely on rating agencies. Therefore, they function as intermediaries that reduce informational asymmetry.

However, Gropp and Richards (2001) argue that rating agencies lack in timeliness. They simply reflect the information that is already known to the market. In addition, there is a potential conflict of interest and they may act in the interest of the issuers. The rating agencies are also blamed for pro-cyclical behaviour (see e.g. Schumacher, 2014). For example, the agencies failed to spot several corporate defaults, such as e.g. Enron and Worldcom, downgrading only after their defaults. More recently, they are singled out for the recent financial crisis, due to inability to foresee subprime mortgage securities defaults. All three rating agencies—Moody's, Standard and Poor's and Fitch graded these securities as safe (see for example White, 2010).

Nonetheless, the agencies justify their sluggishness by consistency of the rating grades and that they cannot be changed just because of short-term fluctuations (see also Gibson et al. (2014), p.3 for another reason of such sluggishness). It is intended to reflect fundamental position of the issuers' creditworthiness, which only partially depends on the temporary fluctuations. Because of "rating stickiness" and lack of capacity to provide early warning of risks, the agencies have introduced rating reviews. Whilst the rating changes (upgrade and downgrade) represent fundamental change of an issuer's financial stability, the reviews indicate that current short-term events may affect ratings in the long-run. By avoiding frequent rating changes the agencies trade-off between accuracy and stability of rating grades.

2.1. Price pressure hypothesis and behavioural aspect of rating announcements

Many empirical studies investigate the impact of credit ratings on stocks. The early studies include Pinches and Singleton (1978), Griffin and Sanvicente (1982), Holthausen and Leftwich (1986), and Glascock, et al (1987). They find mixed evidence of the effect of rating changes. For example, Pinches and Singleton (1978), report that rating changes are anticipated by market participants; and there is no abnormal reaction following an announcement. In contrast, Griffin and Sanvicente (1982), using the same approach show no rating anticipation; whilst Holthausen and Leftwich (1986) and Glascock et al (1987) report negative reaction for downgrades.

Interestingly, Goh and Ederington (1993) and Richards and Deddouche (1999) find that 'stock prices either do not respond to rating changes or respond in the opposite direction to what would be expected if announcements conveyed value-relevant information'. Therefore, downgrades can be good news if associated with an increase in leverage of companies. It shifts wealth from bondholders to shareholders which have positive effect on shares. Whereas downgrades associated with deteriorating firm prospects result in negative effect on stocks.

Several studies find asymmetric responses to positive and negative rating events. For example, Holthausen and Leftwich (1986) examining daily abnormal returns as a reaction to Moody's and Standard and Poor's rating changes, find significant negative returns after downgrades and no abnormal performance for upgrades. Results by Hand et al. (1992) confirm such asymmetric reaction to rating changes. Similarly, Dichev and Piotroski (2001) find no abnormal return following upgrades. They also find substantial negative abnormal returns after downgrades following Moody's bond rating changes during 1970 to 1997. They explain that downgrades are regarded by the market participants as "strong predictors of future deteriorations in earnings", whereas it is not the case for upgrades.

According to Norden and Weber (2004), the information-processing biases can also contribute to this phenomenon. This idea is supported by

Ederington and Goh (1998) who argue that companies voluntarily release good news but reluctant to release negative information. This leads to bias towards negative information content of ratings and creates significant abnormal returns in the case of downgrades (but not for upgrades). Furthermore, Jorion and Zhang (2007) suggest that the agencies allocate more resources to identify problems in credit quality of the issuers due to the "higher reputational cost of failing to detect looming credit problems." This again implies smaller information contained in rating upgrades compared to downgrades.

In addition, there is a price pressure due to changes in rating grade, indirectly imposed by financial regulatory authorities. To be more precise, institutional investors such as insurance companies, pension and mutual funds are restricted from holding assets below investment rating grade (see for example Trusted Sources, 2011). The threshold of investment-grade debt, below which investments are often labelled speculative, corresponds to a rating of Baa3 from Moody's and BBB—from S&P and Fitch. And each negative rating event which brings the issuer closer to the investment threshold will trigger risk of selling its securities by institutional investors. Taking into account that these institutions keep large amount of capital in debt securities, shift of these securities put a downward pressure on issuers' stock prices.

Several studies have found support for the price pressure hypothesis. Steiner and Heinke (2001) find that downgrades from investment grade to speculative grade elicit a larger widening of credit spreads. Hand et al. (1992) find that the reaction of investment-grade bonds to rating downgrades is larger than that of speculative-grade bonds. On the other hand, Jorion and Zhang (2007) show that the effect of investment grade threshold is overstated. They introduce a prior rating into their model following which the investment grade effect disappeared.

However, Kliger and Sarig (2000) suggest that the impact of rating announcements is greater for firms with high leverage (which are typically rated speculative grade) than for firms with low leverage (which are typically rated investment grade). Explanation for this effect might be in payment conditions of many financial contracts which are used to be linked to credit ratings (Micu et al., 2006). Such contracts specify that a rating downgrade empowers creditors to demand immediate repayment of debt which in turn can negatively influence the debtor's financial stability and put downward pressure on share prices.

3. Methodology

For this research we employ event study methodology. This methodology investigates the impact of news on stock prices. Depending on the type of information, announcements increase or decrease the value of stocks on the market. Quintessentially, it involves estimating the direction and size of the abnormal return attributable to unanticipated information, see further Pham (2015), Chi and Tang (2008), Hall and Kenjegaliev (2009), Campbell et al (1997), McWilliams and Siegel (1997), Corrado and Zivney (1992), Corrado (1989), Ball and Taurus (1988), Brown and Warner (1980, 1985) and Dyckman et al (1984). In this paper an event date is upgrade or downgrade announcement made by three rating agencies.

3.1. Cumulative abnormal return

The event window in the paper is subdivided into four time intervals: 60 to 21 business days before a rating announcement $[-60, -21]$; 20 to one day before the announcement $[-20, -1]$; a day of the announcement and the following day $[0, +1]$; and 2 to 20 days after the announcement $[+2, +20]$ (see Fig. 1). If the rating announcement is fully anticipated, then equity prices should adjust prior to the announcement, in either $[-60, -21]$ or $[-20, -1]$ intervals.

In case if a rating announcement has informational value and results in a price pressure, then it should have price impact in $[0, +1]$ interval. For example, Micu et al. (2006) state that this two-day interval should

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