



# Compensation incentives of credit rating agencies and predictability of changes in bond ratings and financial strength ratings



Andreas Milidonis\*

Department of Accounting & Finance, Faculty of Economics & Management, University of Cyprus, P.O. Box 20537, CY-1678 Nicosia, Cyprus

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## ABSTRACT

Over the past decade there has been mixed evidence on the lead–lag relation between issuer-paid and investor-paid credit rating agencies. We investigate the lead–lag relationship for changes in bond ratings (BRs) and financial strength ratings (FSRs), for the US insurance industry, where FSRs impose market discipline. First, we find that changes in issuer-paid BRs are led by changes in investor-paid BRs, even over a period that issuer-paid agencies have improved their timeliness. Second, information flows in both directions between changes in issuer-paid BRs and FSRs. Third, issuer-paid FSRs are predictable by investor-paid BRs. Fourth, the lead effect of investor-paid downgrades is economically significant as it is associated with an unconditional, post-event, 30-day cumulative abnormal return of –4%. This return is a result of investor-paid downgrades in BRs, which predict more downgrades in the following 90 days (same period return of –11%).

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## 1. Introduction

Information intermediaries such as credit rating agencies and their incentives play a valuable role in the financial reporting environment given financial markets' increased complexity and interconnectedness (Beyer et al., 2010). Their role becomes even more significant in industries that are more opaque, such as the insurance industry (Morgan, 2002), where investors, consumers but also regulators use ratings as proxies for the financial vulnerability of rated entities (e.g., Grace et al., 2004; Weiss and Chung, 2004; Potier, 2007; Chen et al., 2008). The insurance industry is unique in several aspects and should be examined in isolation from other industries with respect to the types of ratings that characterize it, but also the timeliness of these ratings, for the following reasons: (a) the industry is governed by a market discipline mechanism, which has been shown to be dependent on ratings (Epermanis and Harrington, 2006), (b) in contrast to non-financial industries, it is rated on two major types of risks (ability to repay corporate debt, and ability to repay promises on policyholders' contracts), (c) it is rated by the two types of credit rating agencies (issuer-paid and investor-paid), and (d) it has a homogeneous

regulatory structure, which is quite different from other non-financial industries.

Why are the different types of credit rating agencies important? Critics of issuer-paid rating agencies (they are compensated by the companies they rate) argue that the potential conflict of interest present in the compensation structure of issuer-paid agencies may distort the timely release of changes in their ratings (e.g. White, 2010). In contrast, investor-paid agencies (collect subscription fees from investors to rate third parties) strive to inform their subscribers of potential changes in the credit risk of rated firms and hence have an incentive to supply the market with more timely ratings than their issuer-paid competitors. Over the past decade there has been mixed evidence on the relative timeliness between the two types of rating agencies. Specifically, Johnson (2004) and Beaver et al. (2006) show that changes in bond ratings by investor-paid agencies lead those of issuer-paid agencies. On the other hand, Cheng and Neamtiu (2009) show that issuer-paid agencies have improved their timeliness (relative to themselves) for bond ratings that are close to default, while Berwart et al. (2012) show that issuer-paid agencies have improved their bond ratings' timeliness relative to those of investor-paid agencies.

What are the two major types of ratings published for the insurance industry? Credit rating agencies issue bond ratings (BRs) to rate the credit risk inherent in insurance corporate bond obligations. In addition, rating agencies issue financial strength ratings

\* Tel.: +357 22 89 3626; fax: +357 22 89 5030.

E-mail address: [Andreas.Milidonis@ucy.ac.cy](mailto:Andreas.Milidonis@ucy.ac.cy)

	Bond Ratings (BRs)	Financial Strength Ratings (FSRs)
Investor-paid: Egan Jones Ratings	Yes	No
Issuer-paid: Fitch; Standard & Poor's	Yes	Yes

Investor-paid rating agencies are paid by (institutional) investors to rate third parties. Issuer-paid rating agencies are mostly paid by companies they rate, even though they also receive subscription-based compensation by (institutional) investors. Egan Jones Ratings publishes BRs. Fitch and Standard & Poor's publish both BRs and FSRs.

**Fig. 1.** Market structure of bond and financial strength ratings.

(FSRs), to rate the overall ability of insurance firms to fulfill policyholder obligations.<sup>1</sup> FSRs have been associated with market discipline in the insurance industry (Epermanis and Harrington, 2006) and also significant market reactions with the announcement of their changes (Halek and Eckles, 2010). Insurance firms typically solicit and pay for FSRs from issuer-paid rating agencies. Most BRs are also produced by issuer-paid agencies, but some BRs are published by investor-paid rating agencies. The relative timeliness of issuer- vs. investor-paid agencies in the market for BRs has implications for FSRs as the insurance firms' default and insolvency risks are intimately linked (Pottier and Sommer, 1999; Grace et al., 2003).

In this paper, we examine the unexplored lead-lag relationship between BRs and FSRs for the US insurance industry, across the two types of rating agencies. Then we examine the potential economic value for investors who follow the announcements of changes in these ratings. Our sample comprises issuer-paid and investor-paid rating agencies' changes in BRs and FSRs for insurance companies from 1996 to 2007. The largest rating agencies by market share (Fitch, Moody's and Standard & Poor's) are issuer-paid agencies that publish both BRs and FSRs. Investor-paid agencies (e.g., Egan Jones), on the other hand, only produce BRs (Fig. 1). We examine the lead-lag relation between types of ratings within the same rating agency, and also across rating agencies using an ordered probit model that takes into account both the level and the timing of upgrades and downgrades, following Güttler and Wahrenburg (2007) and Alsakka and ap Gwilym (2010). Using event studies, we then examine if there are market reactions in the post-announcement periods of the two types of rating agencies, especially the leader in the lead-lag relations tested.

First, we revisit the lead-lag relationship of investor- and issuer-paid BRs but specifically for the insurance industry, over a period with conflicting evidence on the direction of the lead-lag relationship for all industries. We find that investor-paid rating agencies lead issuer-paid rating agencies in the market for insurance BRs, even after the improvement in the timeliness of issuer-paid rating agencies (Cheng and Neamtiu, 2009; Berwart et al., 2012).

Second, we test the lead-lag relationship between changes in BRs and changes in FSRs, within the same rating agency. Our data shows that a significant percentage of changes in BRs and FSRs happens on the same day. Using only the observations that do not happen on the same day, we conduct a lead-lag analysis. We find that there is information spillover between the two types of ratings, that is, information flows in both directions, for those changes in BRs and FSRs. This result, along with the fact that

several changes in BRs and FSRs happen on the same day, shows that the probability of default on corporate debt and policyholder obligations are connected.

Our third research question follows from the previous two results. Since only issuer-paid rating agencies produce FSRs, then since investor-paid rating agencies lead issuer-paid rating agencies in the market for BRs, and since there is information flow between the two types of ratings, this leads us to ask: do changes in BRs by investor-paid rating agencies lead changes in FSRs by issuer-paid rating agencies? We find evidence that they do. This predictability is important because FSRs impose market discipline (Epermanis and Harrington, 2006), and significant cumulative average abnormal returns (CAARs) are associated with the changes in FSRs of issuer-paid rating agencies (Halek and Eckles, 2010).

Our fourth question is: can investors benefit from the documented predictability above? Using short-term event study analysis, we first find that there are significant CAARs surrounding the announcements of changes in BRs by both investor-paid and issuer-paid rating agencies, with the CAARs associated with investor-paid agencies' announcements being larger. Second, in line with prior literature (Halek and Eckles, 2010), we confirm the presence of significant CAARs associated with the announcements of changes in FSRs by issuer-paid agencies. In both cases (changes in BRs and changes in FSRs) results are larger in magnitude for downgrades than upgrades. Third, we find that investors can benefit from announcements of downgrades in BRs by the investor-paid rating agency, but not those (either BRs or FSRs) of the issuer-paid rating agency. Specifically, we document a negative drift in the 30 trading days following downgrades by the investor-paid agency, which amounts to a cumulative abnormal return of  $-3.92\%$ . Using identical methodology for the post-announcement periods of issuer-paid rating agencies, we do not find any significant cumulative abnormal returns. Then, we isolate those investor-paid downgrades followed by other downgrades in the subsequent 90 days, to show that the overall cumulative abnormal return of  $-3.92\%$  is driven by the leading (investor-paid) downgrades (CAAR of  $-10.62\%$ ) and not the followers (no significant CAARs). Therefore, evidence suggests that the post-downgrade drift is due to lead-effect of the investor-paid agency and not an under-reaction to bond downgrades (Dichev and Piotroski, 2001).

This is the first study to show that changes in ratings published by investor-paid rating agencies are not only predictive in the market for BRs, but they can also predict changes in FSRs, which serve as a mechanism for market discipline in the insurance industry. Because changes in premiums (Epermanis and Harrington, 2006) directly affect the demand for insurance products, markets appear to react with large CAARs surrounding the announcement of BRs by investor-paid rating agencies long before issuer-paid agencies confirm their competitors' actions. Our results show that there are inefficiencies not only within a group of information

<sup>1</sup> In 2008, the total book value of policyholder obligations and corporate debt obligations amounted to about 81% (total policy reserves of 60.6% and separate accounts liabilities of 20%) and 9.9%, respectively, of the total reported insurance liabilities for publicly traded firms ([www.snl.com](http://www.snl.com)).

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