Executive Summary

A Comprehensive Examination of Insurer Financial Strength Ratings

By Cassandra Cole, Enya He, and Kathleen McCullough

Purpose and Key Findings: In this study, we explore the potential similarities and differences across insurer financial strength ratings, with a particular focus on Demotech, Inc. Demotech differs from the traditional rating agencies in several key ways. First, it provides a provisional (unsolicited) rating to all firms with available financial data each year. If firms choose to finalize the rating, the rating becomes available to the public. Second, Demotech uses less non-publically available information in the construction of its ratings than other agencies. Finally, there are significantly fewer barriers to obtaining a Demotech rating. As a result, it is easier for smaller, newer, and/or mono-state firms to obtain a Demotech rating than ratings from other agencies. Comparisons of Demotech ratings to other agencies show relative consistency in the factors that drive Demotech ratings compared to agencies such as A. M. Best, Moody's, Standard and Poor's, and Fitch. There also is general consistency in the firms that each agency would categorize as financially secure.

Executive Summary: Insurer financial strength ratings have been studied by a variety of academic and industry sources. Generally, these studies have found that financial characteristics including capitalization, liquidity, profitability, and firm size are important in determining insurer ratings (e.g., Harmelink, 1974; Pottier and Sommer, 1999; and Gaver and Pottier, 2005). While there is general consistency in the factors found to impact ratings, authors do note some variation across the agencies (e.g., Cantor and Packer, 1997; Pottier and Sommer, 1999; Van Roy, 2006; and Poon, Lee and Gup, 2009). We build on this literature by expanding the work to include a comparison of Demotech ratings to the ratings provided by the more traditional ratings agencies - A. M. Best, Moody's, Standard and Poors (S&P), and Fitch.

The analysis of Demotech ratings also provides some insight into the potential issues surrounding unsolicited ratings. Much of the prior research in the banking area has suggested that unsolicited ratings are lower than solicited ratings (e.g., Poon, 2003; Poon and Firth, 2005; Poon, Lee, Gup, 2009). This has not been tested in the insurance area, largely due to the limited use of unsolicited ratings. While the provisional Demotech ratings are not released to the public, they do have many of the characteristics of unsolicited ratings in that they are initiated by the rating agency rather than the insurer and they are based solely on publically available data.

We use a data set of ratings assigned during the period 2000 to 2008 compiled from SNL Financial Database, Demotech, and A. M. Best. We also use operational and financial insurer data obtained from annual statements filed with the National Association of Insurance

Commissioners. Following Pottier and Sommer (1999), we condense the ratings into five categories using the descriptions provided by the agencies to facilitate comparison across the ratings agencies.

Table 1 provides a summary of the number of insurers rated by each of the rating agencies for the years of our sample.[1] As expected, there are more Demotech provisional ratings than any other ratings in every sample year. A. M. Best and S&P ratings are the most common among the traditional agencies.

Table 1 – Number of Ratings in Sample by Year[2]

Year	Demotech (provisional)	Demotech (final)	AM Best	S&P	Moody's	Fitch
2000	1829	195	200	351	146	73
2001	1712	181	548	366	177	196
2002	1591	185	515	363	174	186
2003	1731	177	518	379	214	212
2004	806	175	516	350	211	248
2005	1452	190	493	365	211	264
2006	1604	207	496	367	198	279
2007	1575	221	498	324	200	307
2008	1605	235	490	279	144	317
Total	13,905	1,766	4,274	3,144	1,675	2,082

About 30 percent of the firms in our sample are rated by multiple agencies. A. M. Best has the largest overlap with Demotech-rated insurers at 27 percent. S&P has the second highest percentage overlap with Demotech at six percent.

We further analyzed the subset of 152 firms which held both Demotech (finalized) ratings and A. M. Best ratings during the period. We found that 49 percent held Demotech ratings first while 30 percent held A. M. Best ratings first. Just over two thirds of the firms help both Demotech (finalized) ratings and A. M. Best ratings for multiple years in the sample.

Table 2 provides a summary of the overlap of secure ratings for the firms with Demotech ratings compared to other solicited and unsolicited rating agencies. In general, there is a high degree of overlap across the agencies in what is considered a financial secure insurer.

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[1] Note the total across the rating agencies exceeds the total number of insurer-year observations indicated earlier since insurers are rated by multiple agencies in a given year.
[2] Note that the number of observations is low for A. M. Best in 2000 and Demotech in 2004. This is due to data limitations. To ensure this is not influencing the results obtained, these two models are repeated excluding these data years from the sample. The unreported results are generally consistent with those presented in the paper.

Table 2 – Overlap of Secure Ratings by Rating Firms[*]

	Not Secure	Secure	% Agree w/Demotech (Finalized)		Not Secure	Secure	% Agree w/Demotech (Provisional)
AM Best	91	387	81%	AM Best	229	2898	93%
S&P	10	92	90%	S&P	17	2275	99%
Moody's	4	42	91%	Moody's	6	1524	100%
Fitch	1	31	97%	Fitch	12	1212	99%
	Unsolicited Ratings				**Unsolicited Ratings**		
S&P	21	82	80%	S&P	173	843	83%
Fitch	27	163	86%	Fitch	74	1122	94%

* The percentages represent the number of secure-rated Demotech insurers that also have a secure rating with the other agency.

Next, we consider the number of firms with Demotech's provisional rating that elect to finalize those ratings. Table 3 shows that almost all of the insurers that elect to finalize their provisional ratings are A-rated or above.

Table 3

	Provisional	Finalized	% Finalized
A"	2,956	348	12%
A'	4,052	518	13%
A	4,486	889	20%
S	934	11	1%
M	638	0	0%
L	839	0	0%
Total	13,905	1,766	

In the next portion of our study, we empirically investigate the potential differences in the types of firms that elect to be rated by the different agencies. We consider a variety of factors including whether the firm was rated by other agencies, if the firm is a mono-state insurer, the insurer's business mix, catastrophe exposure, line-of-business concentration, size, financial risk, organizational form, group membership, growth rate, reserving practices, and liquidity.

Given that Demotech's provisional ratings are generally assigned to all firms with available financial information, the comparison of firms with provisional ratings to those electing to finalize ratings is essentially a comparison of Demotech-rated insurers and the industry. Compared to all insurers (provided with a provisional rating), insurers with finalized Demotech ratings are less capitalized, less profitable, more liquid, and cede less reinsurance. Insurers with finalized Demotech ratings also tend to be smaller, younger (defined as established for less than 10 years), more geographically and line-of-business focused, and have higher percentages of

business in long-tail and personal lines.[3] There also appear to be some differences between the characteristics of insurers rated by the different agencies. For example, it appears that a larger percentage of insurers rated by Demotech are mono-state insurers. In addition, these insurers tend to be younger and are generally smaller than insurers rated by the other agencies. This reinforces the expectation that we will likely observe some variation in the results obtained when we empirically examine insurers rated by the various agencies. The results also underscore the importance of using a methodology to compare ratings that controls for the fact that each agency is rating different firms.

To compare the factors important across rating agencies, we use a two-step process known as a Heckman model. We create a set of models for each of the rating agencies. The first stage is a Probit model that identifies whether the insurer was rated by a given agency. The second stage incorporates this information as it models the factors important in developing the financial strength ratings. [4]

The first stage Probit model results (the models which assess what insurers are likely to be rated by a given agency) suggest that insurers rated by other agencies are less likely to obtain ratings from Demotech or A. M. Best. This implies that firms with Demotech and A. M. Best ratings are more likely to have a single financial strength rating compared to other agencies. In both cases, there are institutional factors that make this likely. The lower barriers to gaining a Demotech rating may attract insurers that would not otherwise obtain a rating from the other agencies. A. M. Best has traditionally been considered the primary insurer rating agency, and its ratings are well recognized and accepted. Thus, firms with A. M. Best ratings may not have the same motivation to hold multiple ratings as firms with ratings from other agencies.

Additionally, we find that young insurers are less likely to obtain ratings from two of the traditional rating agencies (A. M. Best and S&P). This variable is not significant for Demotech or Fitch but is significant and positive for Moody's. Combined, these results provide initial evidence that potential barriers resulting from rating requirements and/or cost may discourage or prevent younger firms from obtaining ratings from the two most common rating agencies.

We also find that insurers that are smaller and those operating in a confined geographic area are more likely to elect to be rated by Demotech than the traditional rating agencies. In addition, the results suggest that Demotech-rated insurers are more likely to be fast-growing and associated with greater level of uncertainty in their lines of operations based on the premium growth and percentage of business written in long-tailed lines.

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[3] T-tests indicate differences are statistically significant at the five percent level. For tables of complete results as well as details on the specifications of the models the full paper is available at SSRN: http://ssrn.com/abstract=1706318.

[4] Given that all firms with available financial data are given provisional (unsolicited) ratings, there is no need to control for selection bias for Demotech's provisional ratings.

In comparing the results across all of the models, we find that, while there are differences, there is some consistency in the results. For example, both Demotech and A. M. Best are more likely to rate firms in groups as well as firms with higher loss development ratios compared to S&P and Moody's. Also, with the exception of Demotech, the rating agencies are less apt to rate mutual firms (relative to stocks).

Based on the information in the first stage, we are able to econometrically correct for bias that might arise from different firms being rated by different agencies in our examination of the determinants of financial strength ratings. We consider an array of financial and operations characteristics that are found in prior literature to impact financial ratings. Like prior studies, we find a certain level of variation across firms, however several important patterns emerge. First, we find consistent results for 14 of the 18 factors examined when comparing provisional and finalized ratings for Demotech. This result suggests that, as expected, the key determinants of ratings are relatively consistent between Demotech's provisional and the finalized ratings even though only higher rated firms finalize their ratings and finalized ratings can incorporate additional information from insurers.

There also is some consistency between the results of the Demotech provisional ratings model and those of the other rating agencies. We find the greatest consistency in the results for A. M. Best which has equivalent results for 12 of the 18 factors when compared to Demotech's finalized (solicited) ratings. Equivalent results for the other models ranged from a low of five for Fitch to a high of seven for S&P. When comparing the solicited ratings of all agencies, insurers with higher ratings are typically associated with stronger capital to asset ratios, higher net income to assets ratios, lower recoverables to surplus ratios, higher reinsurance ceded percentages, larger firm size, faster growth, and greater catastrophe exposure.

These results have important public policy implications for insurers, regulators, and consumers as they work to better understand the ratings process. Of particular importance to most is the comparability of Demotech ratings to other agencies. For this reason, both the results related to the degree of overlap between secure Demotech (finalized) ratings and those of other agencies as well as the consistency of factors impacting the determination of financial ratings is important. Given that lenders often have requirements related to the use of rated insurers and some states require ratings in order for insurers to operate in the state, the results suggest that Demotech serves an important service within the rating community and plays a very important role in the insurance market. This is especially true in markets where relatively young and/or geographically focused insurers are active participants.

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