The Effect of Industry Restructuring on Peer Firms—Supplementary Materials

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1 Credit Rating

Table S1 below shows univariate results for peer firms when sorted by credit rating. The results here are fairly consistent - peers have larger and more significant abnormal bond returns following the merger, when they are lower rated. The first section of Table S1 shows this with a sort on whether the peer firm has an investment grade credit rating or not, and only firms with a non-investment grade credit rating have a significantly positive abnormal bond return. A breakdown across the six major rating categories reinforces this finding; peer firms with the highest rating have negative abnormal returns, and abnormal bond returns have a nearly monotonic increase in both the point estimate and statistical significance as rating declines. However, this trend is interupted by the abnormal returns for peer firms that have Ba rating, which have an average abnormal return that is insignificantly negative. The final section in Table S1 splits the Ba group into it's components (Ba1-Ba3) to examine why this group diverges from the norm. The negative abnormal bond returns appear to be significant only for peer firms that fall into the Ba2 category, and whom on average have been downgraded into the Ba2 group in their last ratings report. In this case the downgrade appears to conflict with the possible good news that arrives with the merger announcement. Even if a low rated firm has a greater expected coinsurance benefit from a potential merger, a firm that was just downgraded from investment grade is likely to suffer from a negative business outlook and make a less desireable acquisition target.

Table S1: **Peer Firms' Abnormal Bond Returns sorted by Moody's Credit Rating**

This table reports the average abnormal bond returns for peer firms following the announcement of a merger in their industry. Bond prices are taken from TRACE and bond characteristics from FISD. Moody's credit rating for each bond issue is among the bond characteristics taken from the FISD database. Peer firms are sorted according to the credit rating, and we report the average abnormal bond return in Basis Points, over a window covering 7 days before and 7 days after the deal is announced. Bond returns have been winsorized at the 0.5% and 99.5% levels to mitigate the potential impact of errors in data recording. The standard errors in all results have been adjusted to account for clustering at the deal level.

Investment Grade

Peer firms fall into bins based on whether their credit rating is investment grade (Aaa-Baa3) or not (Ba1-B3).

Firm Rating	Investment Grade	Non Investment Grade
Abnormal Return (Bp)	7.81	5.33**
Std. Err.	(.0004)	(.0002)
N	3224	7660

Firm Rating

Peer firms fall into bins based on their Moody's credit rating.

Firm Rating	Aaa	Aa	A	Baa	Ba	B
Abnormal Return (Bp)	-5.78	-3.15	5.17*	9.17***	-1.69	15.79***
Std. Err.	(.0004)	(.0003)	(.0002)	(.0003)	(.0004)	(.0005)
N	235	1153	2917	3355	1471	1753

Firm Rating

Peer firms fall into bins based on their Moody's credit rating. Reported is a breakdown of the Ba rating class (Ba1 - Ba3).

Firm Rating	Ba1	Ba2	Ba3
Abnormal Return (Bp)	1.46	-8.98*	2.18
Std. Err.	(.0006)	(.0004)	(.0008)
N	402	484	585

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

2 Ratings Changes

In Table S2 below we present average abnormal bond returns for peer firms sorted by whether they have experienced a ratings change in their most recent ratings report. The Table reports abnormal bond returns following a merger announcement for peer firms that were previously up or down-graded, and returns for peer firms based on whether the acquiring firm that initiated the current deal recently had their rating changed. Peers react less strongly to a takeover when the peer firm itself has been recently downgraded, which seems potentially contradictory. However, a recent downgrade likely makes the firm a less attractive target. So that even though the peer firm might stand to gain even more through risk reduction, they may not be attractive enough as a target to ever take advantage of this. Thus it is likely to be the case that while it may be ex-ante better for peer firms to have lower ratings - because they stand to gain more from any risk reduction in the event of acquisition down the line - it is not better for them to have been recently downgraded. Perhaps this is a negative signal about firm quality, certainly it may affect the potential for them to become a target in any wave. And if they are not a target, then they cannot positively expect a risk reduction benefit. We see a much better test of this in the upgrade sort, rather than the downgrade sort. While a downgrade is very likely to be a negative signal about firm quality, not being upgraded should not be a negative signal. However, being upgraded recently would mean that your ex-post risk reduction benefit is lower, and so we should expect to see peer firms that have been recently upgraded to have smaller reactions to a merger announcement—which is exactly what we observe.

Table S2: **Peer Firms' Abnormal Bond Returns Following a Rating Downgrade**

This table reports the average abnormal bond returns for peer firms following the announcement of a merger in their industry. Bond prices are taken from TRACE and bond characteristics from FISD. Moody's credit rating for each bond issue is among the bond characteristics taken from the FISD database. Peer firms are sorted into two bins depending on whether the acquiring firm was downgraded in it's most recent ratings report, and we report the average abnormal bond return in Basis Points, over a window covering 7 days before and 7 days after the deal is announced. Bond returns have been winsorized at the 0.5% and 99.5% levels to mitigate the potential impact of errors in data recording. The standard errors in all results have been adjusted to account for clustering at the deal level.

Acquiror Downgrade

Peer firms fall into bins based on whether the acquiring firm was downgraded in it's most recent ratings report.

Firm Rating	Acquiror Not Downgraded	Acquiror Downgraded
Abnormal Return (Bp)	6.20**	3.45
Std. Err.	(.0002)	(.0007)
N	10340	544

Acquiror Upgrade

Peer firms fall into bins based on whether the acquiring firm was upgraded in it's most recent ratings report.

Firm Rating	Acquiror Not Upgraded	Acquiror Upgraded
Abnormal Return (Bp)	6.98***	-2.56
Std. Err.	(.0002)	(.0004)
N	9836	1048

Peer Downgrade

Peer firms fall into bins based on whether they were downgraded in their most recent ratings report.

Firm Rating	Peer Not Downgraded	Peer Downgraded
Abnormal Return (Bp)	5.69**	8.06
Std. Err.	(.0002)	(.0005)
N	9149	1735

Peer Upgrade

Peer firms fall into bins based on whether they were upgraded in their most recent ratings report.

Firm Rating	Peer Not Upgraded	Peer Upgraded
Abnormal Return (Bp)	7.33***	0.73
Std. Err.	(.0002)	(.0002)
N	8796	2088

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

3 Ratings Changes

In Table S3 we report abnormal bond returns for peer firms that eventually become targets themselves within 3 years of the merger announcement for which they are initially peers. This test provides evidence in favor of the Acquisition Probability Hypothesis, and the idea that a peers merger may signal an improvement in the conditional probability of being acquired. Within our sample 167 peer firms are acquired within 3 years of the merger announcement. These peer firm bondholders earn a large positive abnormal return surrounding the announcement, which is not unexpected as the average peer bondholder earns a positive abnormal return.

Table S3: **Abnormal Bond Returns of Peer Firms that are Acquired in the Future**

This table reports the average abnormal bond returns for peer firms following the announcement of a merger in their industry. Bond prices are taken from TRACE and bond characteristics from FISD. Moody's credit rating for each bond issue is among the bond characteristics taken from the FISD database. Peer firms are analyzed if they are acquired within 3 years of the announcement date, and we report the average abnormal bond return in Basis Points, over a window covering 7 days before and 7 days after the deal is announced. Bond returns have been winsorized at the 0.5% and 99.5% levels to mitigate the potential impact of errors in data recording. The standard errors in all results have been adjusted to account for clustering at the deal level.

	Future Targets
Abnormal Return (Bp)	43.28*
Std. Err.	(.0025)
N	167

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$