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Proactive versus reactive M&A activities in the biotechnology industry

Carolin Haeussler *

Ludwig-Maximilian University of Munich, Institute for Innovation Research and Technology Management, Kaulbachstr. 45, D-80539 München, Germany

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Abstract

This paper examines firm characteristics and external firm linkages as determinants of merger and acquisition activities. The results of the empirical analysis based on in-depth interviews with experts in the biotechnology industry and a unique survey data set on German biotechnology firms suggest that firms with inter-firm collaborations are generally more likely to engage in merger and acquisition activities than firms that lack such connections. No evidence is found that financial distress is a factor that influences the propensity to engage in merger and acquisition. This points to the notion that merger and acquisition is more *proactively* initiated than *reactively* forced by immediate threats through financial shortage since inter-firm collaborations provide extra resources and legitimacy buffering firms to facilitate change.

Keywords: Merger and acquisition; Restructuring; Inter-firm collaboration; Biotechnology industry

1. Introduction and motivation

A widely recognized phenomenon pertains to the fact that most industries undergo one or several periods of inter-firm restructuring[1] and consolidation during their industry life cycle. At the industry level, most research on the patterns of such change has originated from industrial economics and population ecological theory (Hannan & Freeman, 1977; Klepper & Graddy, 1990). At the firm level, literature has mainly focused on the motives for inter-firm restructuring and post-restructuring performance issues (Chatterjee, 1992; Holmstrom & Kaplan, 2001; Jarell, Brickley, & Netter, 1988; Ravenscraft & Scherer, 1987). However, little is known about what firm characteristics determine the likelihood of whether a firm engages in inter-firm restructuring. Moreover, up to now it remains to a large extent unanswered whether inter-firm restructuring is more reactively or proactively initiated. Put differently, is financial distress the main motive behind M&A activities? Or are firms that are buffered – e.g., by inter-firm linkages – more likely engaging in M&A activities?

* Tel.: +49 89 2180 5833.
E-mail address: haeussler@lmu.de.

[1] In this paper, the term inter-firm restructuring refers to the type of restructuring that influences firm boundaries through merger and acquisition.

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The last question is of particular importance as the past decade has witnessed a dramatic increase in inter-firm linkages (Audretsch, 2001; Hergert & Morris, 1988). Several firms show "fading boundaries"[2] as they find inter-firm collaboration to be an attractive mode of organizing the development and commercialization of innovative technology. Scholars argue that inter-firm collaborations provide a viable means to adapt to fast-changing technological and market demands, to acquire resources, to get access to the more diffusely located knowledge, and to profit from endorsement by their affiliates (Haeussler, 2006; Powell, 1987; Stuart, Hoang, & Hybels, 1999). In this paper, I attempted to explore if firms active in establishing and maintaining collaborations profit from buffering and more likely engage in M&A than less intense collaborative firms. The contribution of the paper is twofold: firstly, the paper adds to the literature in disentangling the controversy about buffering as being a driver or insulator for change and secondly the paper investigates whether inter-firm restructuring is rather actively initiated by firms then enforced.

The paper aims to shed light on these questions by in-depth interviews with industry experts and by analyzing a unique survey data set on German biotechnology firms. The biotechnology industry provides an attractive field of study as the industry is in transition during the observation period. The main drivers of industry restructuring are (1) growth patterns as the industry is outgrowing its infancy and (2) a response to an industry-wide shock.

The remainder of the paper proceeds as follows. Section 2 provides an overview of previous studies on inter-firm restructuring from a firm level perspective. Section 3 discusses the characteristics and current challenges in the biotechnology sector and Section 4 elaborates on inter-firm restructuring options and their determinants. In Section 5, the design of the industry survey is described. Section 6 presents the data set and the results of the multivariate analysis. Section 7 discusses the results and concludes.

2. Existing literature on (inter-firm) restructuring

A large number of studies explore restructuring issues. Whereas this study is about inter-firm restructuring, other studies exist that investigate internal restructuring or financial restructuring.

At the firm level, scholars have mainly focused on two questions – why do firms restructure and are restructuring firms more successful than those that do not? The restructuring motives range from strategic to financial and to personal objectives. Regarding post-restructuring performance of firms, the results are mixed. Some researchers have shown that firms tend to profit from M&A (e.g., Chatterjee, 1992; Gugler, Mueller, Yurtoglu, & Zulehner, 2003) while others have shown that firms typically do not profit (Dewing, 1921; Hogarty, 1970). However, little research investigates the characteristics of firms that engage in M&A activities. Former studies have mainly asked a few, focused questions, while a broader study is missing.

Contradicting views exist on whether inter-firm linkages promote or reduce the probability of organizational transformation. Arguing in favor of a positive effect, Miner, Amburgey, and Stearns (1990) find in their study of the Finnish newspaper industry that firms with linkage to a political party experience increased organizational transformations (e.g., change of publisher). However, some other studies suggest that linkages balance environmental turbulence that decreases the necessity of change and thus the rate of organizational transformation. Hence, Stearns, Hoffman, and Heide (1987) report in their study of 145 commercial television stations over a 15-year period that linkages can help protecting firms from undesirable effects in times of environmental complexity reducing the need for change. Similarly, Scott (2003) suggests that firms without extra resources, i.e., provided through collaborations, are forced to attempt hazardous changes to avoid failing outright. Argyres and Liebeskind (2002) analyzed the fragmentation in the US biotechnology industry. They propose that firms that suffer from governance inseparability – e.g., former constitutional commitments or former long-term contracts – are constrained in changing organizational structure.

Other investigations on the determinants of restructuring have attempted to demonstrate that the financial position of a firm influences restructuring activity. In their analysis of 46 US firms in the 1980s, John, Lang, and Netter (1992) find that firms voluntarily restructure in response to performance decline. BarNiv and Hathorn (1997) propose that merger can be motivated by financial distress. Similarly, Pastena and Ruland (1986) suggest that a lot of acquired firms are in severe financial conditions. For these firms, mergers or acquisitions are often the only alternative to insolvency. In their study of the global reinsurance market, Cummins and Weiss (2002) find that less efficient and under-capitalized firms are more often acquired. More recently, Danzon, Epstein, and Nicholson (in press) report in their study of

[2] Picot, Ripperger, and Wolff (1996).