Merger waves following industry deregulation ☆

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A B S T R A C T

Deregulation is endogenous. It is preceded by poor industry performance and is predictable with performance variables. These results imply that merger activity following deregulation should be systematically related to poor pre-deregulation industry performance. Consistent with this hypothesis, I find that post-deregulation mergers serve a contractionary role. Bidders and targets in post-deregulation mergers are poor performers prior to the merger and operate with significant excess capacity. Consistent with the hypothesis that post-deregulation mergers represent a form of exit, the frequency of cash and bankruptcy mergers is significantly higher following deregulation and the offer premium is significantly lower.

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1. Introduction

Empirical research on mergers and acquisitions (M&A's) has documented two broad stylized facts. First, mergers involving publicly traded targets come in distinct aggregate waves. Second, aggregate merger waves are caused by the clustering of industry-level merger waves.[1] Under the neoclassical view, merger waves result from technological and/or economic industry shocks that necessitate industry transformation (see Gort (1969), Maksimovic and Phillips (2001) and Jovanovic and Rousseau (2002), for example; Coase (1937) argued earlier that technological changes lead to mergers). The traditional view in the literature is that these industry shocks are unexpected or exogenous. For example, Andrade et al. (2001) in their survey of the merger literature argue that unexpected industry shocks lead to time clustering of industry-level takeover activity. Similarly, Rhodes-Kropf et al. (2005) summarize the Q theory of mergers by stating that exogenous economic shocks may create attractive opportunities for reorganization if some firms are well positioned to take advantage of these shocks while others are not.

It is not difficult to imagine however, that certain industry shocks are not unexpected or exogenous. This view has two implications. First, a non-trivial portion of merger activity following an endogenous shock should be explained by factors that cause the shock in the first place. Second, characteristics of mergers that take place following an endogenous shock should be systematically related to factors that cause that industry shock. This logic is important for our understanding of merger dynamics.

  [1] See Betton et al. (2008), Andrade et al. (2001), and Bruner (2004) for summary information on merger waves. See Mitchell and Mulherin (1996), Mulherin and Boone (2000), Maksimovic and Phillips (2001), Andrade and Stafford (2004), Harford (2005), among others, for evidence of industry clustering in merger waves.

It also helps move the merger debate forward from analyzing *whether* industry shocks lead to merger activity to analyzing *how* industry shocks lead to merger activity.

There are a number of industry shocks that are endogenous to industry dynamics. In this paper, I focus on industry deregulation, which is one of the most often cited and arguably most significant of them. Andrade et al. (2001), for example, conclude that deregulation of such industries as airlines, telecommunications, railroads, utilities, and financials is the dominant factor in M&A activity since the 1980s. Schoenberg and Reeves (1999) similarly find that exposure to deregulation is the most significant driver of high merger activity in the United Kingdom. Bruner (2004) and Weston et al. (2004) in two widely used M&A textbooks list deregulation as the top driver of M&A activity.

Economic deregulation, defined as deregulation of entry, exit, price, and quantity, has had a significant impact on the U.S. economy. Winston (1993), citing the results from the 1991 Survey of Current Business, reports that the share of regulated industries' output was as high as 17% of GNP in 1977. Over the next decade, that share has declined considerably, so that by 1988, the share of regulated industries output stood at only 6.6% of GNP. In my analysis below, I corroborate these findings and find that regulated industries that become deregulated lose considerable significance for the U.S. economy over the 1960–2008 period. It seems natural to ask whether factors that contributed to the decline of these industries also played a role in the deregulation decision and affected merger activity that followed.

My starting point is to recognize that regulators do not randomly decide to deregulate an industry. Rather, regulators respond to pressure from special interest groups (Becker, 1983; Peltzman, 1976; Stigler, 1971) and to changes in economic conditions in an industry. Deregulation may take place in response to unexpected industry shocks that make industry environment less predictable (Demsetz and Lehn, 1985). For example, Jensen (1993) and Mitchell and Mulherin (1996) argue that the sudden spike and volatility in energy prices from the oil price shocks made the regulatory scheme in the airline industry less viable.

In addition to exogenous price shocks, deregulation may take place in response to technological and/or production shocks in an industry. Consider the development of microwave technology in the 1950s, for example. This technological breakthrough transformed telecommunications from a natural monopoly to a competitive industry, thereby eliminating the need for entry and rate regulation. During the same time period, the development of the interstate highway system significantly increased railroad competition from trucking, which in turn, increased pressure on the Interstate Commerce Commission (ICC) to relax rail rates.

Finally, deregulation may take place in response to more gradual demand/supply changes in the industry that make regulation less desirable. The airline industry again provides a good case study. The Civil Aeronautics Board (CAB) initially set out to regulate airline fares in order to support an air transportation system larger than the private market would support (Keeler, 1984). The intent was to provide service to small communities that would not be supported otherwise. The CAB achieved this objective by setting rates on long-haul high-density routes too high and using abnormal profits to cross-subsidize rates on low-density routes.[2] From the CAB's viewpoint, however, the unintended consequence of such a policy was that airlines began to compete on service quality, which dissipated abnormal profits on high-density routes. Coupled with significant increases in the small community population and the demand for air travel, the need for airfare regulation was significantly reduced. As soon as this became accepted, airline deregulation, further fueled by the oil price shocks, became an eventual certainty. Deregulation, therefore, takes place when regulation no longer works and is no longer politically tolerable, which should be reflected in poor industry performance prior to deregulation.

In the empirical analysis below, I document that deregulation is indeed preceded by poor and deteriorating industry performance. Prior to deregulation, industries under regulatory control are characterized by abnormally low and declining profitability, high leverage, low solvency, negative liquidity, and high but declining capital expenditures. Despite high capital expenditures, however, regulated industries grow no faster than other industries. This suggests that industries overinvest in capital during the period of regulation. Prior industry performance also predicts industry deregulation. Even after controlling for other determinants of regulatory changes, such as industry composition, competition, and lobbying pressure from special interest groups, I find that industry performance and changes in industry performance are strongly related to the deregulation probability. These results suggest that lawmakers respond to changes in industry conditions when initiating regulatory reform and decide to deregulate an industry when regulation fails to achieve its intended objective. Poor and deteriorating industry performance is a symptom of failure of regulation.

Given these results, I next argue that merger activity and merger characteristics are systematically related to poor pre-deregulation performance of deregulated industries. I hypothesize that mergers following industry deregulation represent a form of exit from poorly performing industries. When industries are regulated, exit (including through M&A activity) is less likely. For example, entry regulation suppresses competition and allows inefficient firms, that otherwise would disappear, to survive. Exit regulation explicitly prevents firm exit because the government considers the product produced by regulated firms important for public welfare. Price regulation suppresses cost considerations and often gives preferential treatment to some customers at the expense of others. Deregulation then either directly removes exit barriers or facilitates exit of less efficient firms, by creating a more competitive industry environment. Deregulation may also facilitate the ongoing industry transformation by speeding up technological and other changes that have contributed to deregulation in the first place. Merger clustering, especially involving exit mergers, therefore, is more likely following deregulation.

Under the exit explanation, I expect a disproportionately greater number of cash mergers (Jensen, 1988, 1993) and of bankruptcy mergers during the wave that follows industry deregulation. I label such a wave as the deregulatory merger wave. I also expect bidders and targets in the deregulatory merger wave to be poor performers relative to bidders and targets in other

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[2] Averch and Johnson (1962) show that firms are willing to enter low-cost markets as long as they are regulated on the rates of return earned in all markets.