



Embeddedness across Governance Modes: Is There a Link between Pre-Merger Alliances and Divestitures?

Journal:	<i>Academy of Management Discoveries</i>
Manuscript ID	AMD-2017-0134.R2
Manuscript Type:	Discoveries in Brief
Keywords:	Trust < Interpersonal & Team Processes, Embeddedness < Networks, Cooperative Strategies < Strategy Content, Joint Ventures & Alliances < Strategy Implementation, M&A Process & Strategy < Strategy Implementation, Inter-organizational Networks < Networks, Social Capital < Organizational & Management Theory, Longitudinal Data Analysis < Research Methods, Diversification, Restructuring, & Spinoffs < Strategy Content, Knowledge Transfer < Strategy Implementation
Abstract:	<p>The current study explores whether and how an organization's different types of governance modes—alliances, mergers, and divestitures—may be intertwined over time. As such, we consider whether boundary decisions may be socially embedded not just within, but across different governance modes. In particular, we focus the analysis on a specific three-stage temporal sequence, which represents a common trajectory of consecutive governance modes: (1) alliance, followed by (2) merger, followed by (3) divestiture. Based on data from the Securities Data Company (SDC) Platinum database and Compustat database, our survival analysis results indicate that pre-merger alliances are significantly associated with divestiture likelihood: mergers between organizations that had been involved in an alliance before entering into the merger are found less likely to be divested. The paper's results underline the merits of simultaneously considering multiple types of ties when analyzing issues related to organizational embeddedness, complements recent research on sequential corporate-strategy patterns, and sheds new light on the important empirical phenomenon of pre-merger alliances.</p>

1
2
3 **EMBEDDEDNESS ACROSS GOVERNANCE MODES:**
4 **IS THERE A LINK BETWEEN PRE-MERGER ALLIANCES AND DIVESTITURES?**
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20

21 **OLIVER SCHILKE**

22 The University of Arizona
23 Eller College of Management, Department of Management and Organizations
24 405GG McClelland Hall, 1130 E. Helen St.
25 Tucson, AZ 85721, USA
26 Tel: (520) 621-1232
27 *e-mail: oschilke@arizona.edu*
28
29
30

31
32 **HAN JIANG**

33 The University of Arizona
34 Eller College of Management, Department of Management and Organizations
35 405AA McClelland Hall, 1130 E. Helen St.
36 Tucson, AZ 85721, USA
37 Tel: (520) 621-1453
38 *e-mail: hjiang2@email.arizona.edu*
39
40
41
42
43
44
45
46
47
48
49
50

51 The authors are thankful for the insightful comments provided by the associate editor, Paul Ingram,
52 and by two anonymous reviewers. The authors are also grateful to Rebecca Jean Emigh, Martin
53 Reimann, Gabriel Rossman, Katsuhiko Shimizu, and Megan Sweeney. The paper benefitted from
54 discussions with participants of the 2011 Academy of Management Meeting.
55
56
57

Abstract

The current study explores whether and how an organization's different types of governance modes—alliances, mergers, and divestitures—may be intertwined over time. As such, we consider whether boundary decisions may be socially embedded not just within, but across different governance modes. In particular, we focus the analysis on a specific three-stage temporal sequence, which represents a common trajectory of consecutive governance modes: (1) alliance, followed by (2) merger, followed by (3) divestiture. Based on data from the Securities Data Company (SDC) Platinum database and the Compustat database, our survival analysis results indicate that pre-merger alliances are significantly associated with divestiture likelihood: mergers between organizations that had been involved in an alliance before entering into the merger are found less likely to be divested. The paper's results underline the merits of simultaneously considering multiple types of ties when analyzing issues related to organizational embeddedness, complements recent research on sequential corporate-strategy patterns, and sheds new light on the important empirical phenomenon of pre-merger alliances.

Keywords: organizational embeddedness; trust; governance modes; survival analysis

1
2
3 Organizations constantly adjust their boundaries, altering how the social structure that
4 constitutes the organization is demarcated from the environment (Chang, 1996; Helfat &
5 Eisenhardt, 2004). Such boundary changes have important implications for organizational
6 members' identification and sense of belonging (Fiol, 1989), stakeholder assessments (Zuckerman,
7 2000), and organizational performance outcomes (Healy, Palepu, & Ruback, 1992). Consequently,
8 organizations devote considerable attention and resources to boundary decisions.
9
10
11
12
13
14
15

16 Organizational boundary adjustments typically come in the form of three governance
17 choices: alliances, mergers, and divestitures (Pfeffer, 1972; Villalonga & McGahan, 2005).
18 Alliances are voluntary collaborations in which organizations temporarily combine their resources
19 while remaining economically and legally independent (Gulati & Gargiulo, 1999). In mergers (also
20 known as M&A—mergers & acquisitions¹), one organization buys another organization to integrate
21 their operations. Divestitures, counterparts to mergers, involve the division of organizations into
22 separate units (Brauer, 2006; Brauer, Mammen, & Luger, 2017).
23
24
25
26
27
28
29
30
31

32 But how do organizations choose among these three governance alternatives? Transaction
33 cost economists have mainly approached this question from a static “efficiency” perspective. Their
34 central argument is that each of the three governance modes is associated with specific costs and
35 that organizations should choose the governance mode that minimizes the cost of governing in their
36 specific situation (Coase, 1937; Williamson, 1981, 1991). According to this view, boundary
37 management is best understood as a set of discrete decisions based on the criterion of governance
38 cost minimization (cf. Santos & Eisenhardt, 2005).
39
40
41
42
43
44
45
46
47

48 While the efficiency perspective has yielded valuable insights, it has also constrained
49
50
51

52
53 ¹ A merger is a combination of two or more organizations in which all but one legally cease to exist, whereas an
54 acquisition occurs when one organization takes a controlling ownership interest in another organization, with the
55 acquired organization continuing to exist as a legally owned subsidiary (DePamphilis, 2010). However, because of the
56 many similarities of the two governance decisions, we follow Stearns and Allan (1996), Penrose (1959) and others in
57 using merger as an umbrella term that also encompasses acquisitions.
58
59
60

1
2
3 discourse to static cost considerations, largely neglecting social conceptions of organizational
4
5 boundary dynamics. More specifically, through its atomistic analysis of single governance
6
7 decisions, the efficiency perspective fails to account for the fact that organizational decisions are
8
9 socially embedded in ongoing social relationships (Granovetter, 1985; Ingram, Robinson, & Busch,
10
11 2005; Ratajczak-Mrozek, 2017; Swedberg, 1994; Uzzi, 1996). That is, the structure of existing
12
13 interorganizational relationships, and not simply a transaction-specific cost minimization rule,
14
15 determines organizational boundary decisions and the modes of governance. For example,
16
17 organizations prefer to enter into new alliances with other organizations that they had previous
18
19 alliances with (Gulati & Gargiulo, 1999; Powell, Koput, & Smith-Doerr, 1996). As such, existing
20
21 relationships among organizations may be fundamentally related to organizational decisions on
22
23 future governance structures.
24
25
26

27
28 The current study extends this line of research by exploring how an organization's *different*
29
30 types of governance modes (i.e., alliances, mergers, and divestitures) may be intertwined over time.
31
32 Earlier research has looked at how one interorganizational link is associated with other
33
34 interorganizational links *of the same type*. In this study, we instead consider whether there may also
35
36 be relevant relationships *across types*. In particular, we focus the analysis on a specific three-stage
37
38 temporal sequence, which represents a common trajectory of consecutive governance modes:
39
40 (1) alliance, followed by (2) merger, followed by (3) divestiture. The key question this study seeks
41
42 to answer is whether and how a pre-merger alliance will be associated with the likelihood of
43
44 divestiture.
45
46
47

48
49 This article speaks to several different literatures. First and foremost, it contributes to the
50
51 abovementioned literature on interorganizational embeddedness (Granovetter, 1985; Ingram et al.,
52
53 2005; Ratajczak-Mrozek, 2017; Swedberg, 1994; Uzzi, 1996) by exploring the question of whether
54
55 embeddedness can occur not just within but also across different types of organizational-boundary
56
57

1
2 decisions. Second, the article adds to the strategic management literature on sequential corporate-
3 strategy moves (e.g., Bennett & Feldman, 2017; Karim & Mitchell, 2000; Vidal & Mitchell, 2018),
4 which stresses the importance of understanding systematic temporal patterns in how firms sequence
5 activities to manage their corporate portfolios. Most of the extant research in this area is guided by
6 resource or scope considerations that may explain connections among corporate-strategy choices
7 over time. However, this literature has yet to fully embrace *relational* considerations that may
8 explain sequential patterns. This is where the current investigation fits in. Emphasizing that
9 corporate-strategy decisions, especially when followed through time, regularly occur in dyads with
10 the same partner rather than in a relational vacuum, our study examines how a dyad's joint history
11 can substantially shape the firms' corporate-strategy trajectory. Finally, the paper's findings make a
12 phenomenological contribution to the broader literature on alliance types by highlighting the
13 importance of pre-merger alliances, an emerging empirical phenomenon whose characteristics and
14 specificities have yet to be fully elaborated.

32 **ALLIANCES, MERGERS, AND DIVESTITURES**

33
34 Anecdotal evidence suggests that a merger is regularly preceded by an alliance, which
35 provides the organizations with the opportunity to get to know each other before committing to
36 become one (Bleeke & Ernst, 1991; Lajoux, 2006). Prominent examples of pre-merger alliances,
37 such as the Sony-Ericsson alliance (Singh, 2011) or the alliance between Pfizer and Warner
38 Lambert (Dyer, Kale, & Singh, 2004), abound.

39
40 At the same time, many mergers are later divested (Capron, Mitchell, & Swaminathan,
41 2001; Kaplan & Weisbach, 1992; Porter, 1987; Teece, Rumelt, Dosi, & Winter, 1994).² For
42
43

44
45
46
47
48
49
50
51
52
53 ² Recent strategy research has also looked at the reverse sequence of divestiture followed by a merger (Bennett &
54 Feldman, 2017; Vidal & Mitchell, 2018), but note that this sequence is by far not as prevalent as the first-merger-then-
55 divestiture sequence (Bennett & Feldman, 2017, p. 102) and probably even more exotic when adopting a dyadic rather
56 than a portfolio level of analysis (that is, it is certainly possible but not very common that a firm would first sell and
57 later repurchase the very same entity).

1
2
3 example, Ravenscraft and Scherer (1987) found that 33% of the mergers they studied were later
4
5 divested. Especially when mergers do not meet anticipated performance goals, firms may opt for a
6
7 divestiture of the previously acquired organization (Hitt et al., 2009; Kaplan & Weisbach, 1992;
8
9 Porter, 1987). Examining 271 mergers, Kaplan and Weisbach (1992) revealed that a large
10
11 percentage of subsequently divested units involved an accounting loss.
12
13

14 Our study follows interorganizational relationships through sequential governance modes
15
16 and is specifically interested in the relationship between pre-merger alliances and subsequent
17
18 divestiture likelihood. Drawing from the demographic literature on individual-level governance
19
20 modes as well as earlier research focusing on interfirm alliances, we offer two opposing positions as
21
22 springboards for our investigation. We start by outlining the potential reasons for a positive
23
24 relationship between pre-merger alliances and divestiture likelihood and then discuss why this
25
26 relationship may in fact also be a negative one.
27
28
29

30 **Positive relationship between pre-merger alliances and divestiture likelihood**

31

32 Since there is little theoretical or empirical insight into the relationship between pre-merger
33
34 alliances and divestiture likelihood, we start out by drawing from an in many ways analogous
35
36 stream of literature in a different field. Sociological demographers have long investigated the links
37
38 between various governance choices for individual-level relationships—most notably, cohabitation,
39
40 marriage, and divorce (e.g., Bennett, Blanc, & Bloom, 1988; Phillips & Sweeney, 2005; Teachman
41
42 & Polonko, 1990). These studies all find pre-marital cohabitation to be associated with increased
43
44 risk of divorce (for a review, see Smock, 2000). Here, we make an analogy between interpersonal
45
46 and interorganizational relationships (see, for example, Etheridge, 1991 or Weitz & Jap, 1995, for
47
48 similar approaches to theorizing that employ cross-level analogies). A strategic alliance resembles
49
50 many of the characteristics of cohabitation because it provides managerial and technical personnel
51
52 prolonged access to the partner organization (cf. Shenkar & Li, 1999). Similarly, a merger can be
53
54
55
56
57
58
59
60

1
2
3 viewed as an organizational marriage in which two organizations are united in a legal union, which
4
5 may later be divorced/divested (Cartwright & Cooper, 1993; Levinson, 1970).
6

7 Drawing from the cohabitation literature, two possible explanations can be offered for a
8
9 possible positive association between pre-merger alliances and divestiture likelihood: a selection
10
11 and a process explanation. First, a selection argument suggests that those organizations that form an
12
13 alliance before merging may differ in important ways from those that do not, and these
14
15 characteristics increase the likelihood of divestiture. In particular, some organizations are more
16
17 structurally flexible and able to engage in different governance forms (Volberda, 1996), making
18
19 them more prone to employ a variety of boundary adjustments. As such, certain firms may be more
20
21 likely to be selected into pre-merger alliances as well as into divestitures, producing a positive
22
23 relationship between pre-merger alliances and subsequent divestiture.
24
25
26

27
28 Second, the process explanation suggests that there may be something about initiating an
29
30 interorganizational relationship in form of an alliance that increases the likelihood of subsequent
31
32 merger disruption above and beyond firms' characteristics at the start of the alliance. Going through
33
34 a strategic alliance first (which by definition is comparatively more short-term oriented than a
35
36 merger) may result in an attitude towards the relationship as being flexible and also open to future
37
38 adaptations, such as a divestiture. In addition, a pre-merger alliance may expose the participating
39
40 organizations to the experience that there are viable alternatives to complete integration of the two
41
42 organizations. Especially if the merger proves to be difficult, the organizations may decide to
43
44 reverse their merger decision through divestiture and instead get back to the familiar alliance
45
46 governance mode. In sum, pre-merger alliances may weaken commitment to mergers as an
47
48 institution and as a result make divestitures appear more acceptable. Based on this account, when
49
50 the firms have been involved in a pre-merger alliance, the likelihood of divesting the formerly
51
52 acquired unit may be larger.
53
54
55
56
57

Negative relationship between pre-merger alliances and divestiture likelihood

Although relevant insight into trajectories that involve various different governance modes is so far lacking at the interorganizational level, it may be possible that earlier theorizing on single-type interorganizational trajectories provides relevant insight. In particular, prior research on embeddedness (Granovetter, 1985; Uzzi, 1996) suggests that historical ties can help smooth future interactions. If this argument applies generally to the interorganizational relationship (rather than merely to specific types of agreements), this would suggest that pre-merger alliances may be associated with a decreased divestiture likelihood, primarily through two mutually enforcing ways: (1) through the transfer of fine-grained information and (2) through the generation of trust (Granovetter, 1985; Uzzi, 1996). First, an organization typically acquires a significant amount of relevant information about its partner in an alliance (Gulati, 1995; Powell et al., 1996; Schilke & Cook, 2015; Shenkar & Li, 1999). Such information may, for example, pertain to the other organization's culture, management systems, capabilities, and weaknesses—characteristics that are often tacit and difficult to observe in arm's length market relationships. This information obtained during a prior alliance may prove to be valuable for both the selection of an adequate merger target as well as for an effective post-merger integration. Usually, organizations on the search for an adequate merger target face substantial difficulties obtaining reliable and timely information necessary to determine strategic and organizational fit. In their search, managers may resort to publicly available market, industry, customer, product, and financial analyses about potential target organizations, but these sources may not provide the more subtle details required to assess organizational motives and informal procedures. In most cases, a successful fit analysis may require access to confidential information that would not be revealed outside an established partnership (Gulati & Gargiulo, 1999). Such confidential information may enable a better assessment of compatibility for a subsequent merger, helping the organization decide whether the target would

1
2 make a good fit with its own business procedures and future strategic plans. Thus, a more informed
3 decision can possibly be made as to whether a merger would be an appropriate move when
4 preceded by an alliance. Less propitious interorganizational relationships could be “weeded out”
5 without merger and the process of divestiture. On the other hand, in alliances that do lead to a
6 merger, the partner organizations’ superior information about each other may facilitate a smooth
7 post-merger integration, thus avoiding pitfalls related to integrating an organization with
8 unfamiliar characteristics (Garette & Dussauge, 2000).
9
10
11
12
13
14
15
16
17

18 Second, alliances can create interorganizational trust (Ring & Van De Ven, 1994).³ During
19 an alliance, employees from different organizations engage in close interactions, leading to the
20 formation of mutual emotional attachments, which in turn fosters the production of trust across
21 organizational boundaries. Over time, individual-level trust perceptions become institutionalized
22 and transformed into established, “taken-for-granted” organizational structures and routines
23 (Schilke & Cook, 2013; Zollo, Reuer, & Singh, 2002; Zucker, 1986). That is, a “climate” of trust
24 is constructed that is engrained in interorganizational modes of behavior (Dodgson, 1993) and
25 that can potentially support the durability of a subsequent merger. These arguments suggest that
26 there may be a relationship between pre-merger alliances and a reduced likelihood of divestiture.
27
28
29
30
31
32
33
34
35
36
37
38

39 **METHODS**

40 **Data**

41
42 We collected data on alliances, mergers, and divestitures from Thomson Financial’s
43 *Securities Data Company (SDC) Platinum* database, which is the most comprehensive database
44 available (Schilling, 2009) and has been used in a number of empirical studies on
45 interorganizational relationships (e.g., Anand & Khanna, 2000; Shimizu, 2007). *SDC* is compiled of
46
47
48
49
50
51
52

53
54 ³ There are many different definitions of trust in the literature (for a review, see Rousseau, Sitkin, Burt, & Camerer,
55 1998); however, most include an aspect of perceived risk of vulnerability and involve the notion that trust is “the
56 willingness of a party to be vulnerable to the actions of another party based on the expectation that the other will
57 perform a particular action important to the party” (Mayer, Davis, & Schoorman, 1995, p. 712).
58
59
60

1
2 information from roughly 200 English and foreign language news sources, filings of the U.S.
3
4 Securities and Exchange Commission (SEC) and their international counterparts, trade publications,
5
6 wires and proprietary surveys of investment banks, law firms and other advisors. It is updated daily
7
8 by an international team of professional analysts. Schilling (2009) notes that *SDC*'s coding is
9
10 usually highly accurate and very useful in helping identify transactions of interest and—compared
11
12 to alternative data sources—more inclusive in terms of types of agreements and types of
13
14 organizations covered.
15
16
17

18
19 We imposed two restrictions to the sample. First, we considered transactions between 1990
20
21 and 2009, and second, we restricted the sample to transactions between U.S. firms to minimize
22
23 confounding factors such as country risks and nation-specific institutional arrangements.
24

25
26 Adopting the approach used by Ahuja (2000), we converted all multilateral alliances among
27
28 partners into a set of bilateral alliances between those partners. In line with Villalonga and
29
30 McGahan (2005), the category “mergers” includes deals classified by *SDC* as mergers or
31
32 acquisitions. Finally, consistent with Villalonga and McGahan (2005), a divestiture was measured
33
34 in terms of transactions classified by *SDC* as divestitures, spin-offs, or carve-outs.⁴
35
36

37
38 In constructing a single dataset, we first joined the merger data with the alliance data. Using
39
40 the firms' CUSIP (a 9-character alphanumeric identifier assigned to all North American securities),
41
42 we created “dyad keys” (alphabetically combined CUSIPs from both firms in the dyad), which were
43
44 then used for matching mergers with pre-merger alliances. Next, we combined this alliance/merger
45
46 dataset with the divestiture data using the target firms' CUSIP as the matching variable. This
47
48 procedure resulted in a dataset containing a total of 151,540 mergers, 493 of which were matched
49
50
51

52
53 ⁴ Spin-offs and carve-outs can be considered specific types of divestitures. A spin-off involves the distribution of shares
54 by a company of a unit, subsidiary, division, or another company's stock, or any portion thereof, to its shareholders. In a
55 carve-out, the new company's shares are distributed or sold to the public via an initial public offering (IPO). Finally, the
56 *SDC* divestiture code specifically pertains to a loss of majority control. See Villalonga and McGahan (2005, p. 1191)
57 and Lee and Walsh (2014, p. 10).
58
59
60

1
2 with a pre-merger alliance and 8,436 of which were matched with a post-merger divestiture. Among
3 those 493 mergers that were preceded by pre-merger alliances, 82 were divested.
4
5

6
7 In order to be able to control for specific features of the acquirers and targets that may
8 potentially confound the relationship between pre-merger alliances and divestitures, we further
9 constructed a subsample of merger deals among public firms so as to effectively incorporate
10 specific information about acquirers and targets from the *Compustat* database. We identified 11,324
11 mergers that occurred between two publicly listed firms. Among those 11,324 merger deals, 7,621
12 were divested (including 7,571 regular divestitures and 50 spin-off/carve-out divestitures). 278
13 mergers were preceded by pre-merger alliances, 36 of which were divested.
14
15
16
17
18
19
20
21
22

23 **Measures**

24
25 *Post-merger divestiture.* The dependent variable, post-merger divestiture, was coded as the
26 number of months between merger and divestiture of the previously acquired entity or—if a
27 divestiture was not reported within the time period under investigation—merger and censoring. That
28 is, we are interested only in those transactions that represent divestitures of a previously acquired
29 entity, such that the CUSIP of the target firm in the divestiture matches the CUSIP of a temporally
30 prior merger deal. Following Shimizu (2007), we used the announcement dates of both acquisition
31 and divestiture to measure the time between the two events.
32
33
34
35
36
37
38
39
40

41 *Pre-merger alliance.* We created a dichotomized variable to capture whether or not a merger
42 deal was preceded by an alliance involving the two subsequently merging partners (“pre-merger
43 alliance” = 1, “no pre-merger alliance” = 0).
44
45
46
47

48 *Control variables.* We considered a series of covariates that have been used in prior studies
49 on divestitures (e.g., Bergh, 1997; Shimizu, 2007), including the acquirers’ performance (measured
50 by their return on assets (ROA)) and leverage ratio (the ratio of debt over equity), the combined
51 asset size of the merger partners, as well as the disparity between their asset size. We also controlled
52
53
54
55
56
57

1
2
3 for distance between the merger partners' industries (0 if their SIC codes overlapped across 4 digits,
4
5 1 for a 3-digit overlap, 2 for a 2-digit overlap, 3 for a 1-digit overlap, and 4 otherwise) and
6
7 geographic distance (0 if located in the same city, 1 if in the same county, 2 if in the same state, 3 if
8
9 in the same census region, and 4 otherwise). All control variables were lagged by 1 year.

11 **Analysis**

12
13
14 Because our observation window is finite (until the preset complete date or until 2009), our
15
16 data was right-censored (Allison, 1999). To address this right censoring problem, we used an event-
17
18 history analysis (also known as survival analysis) to model the likelihood of divestiture. The event-
19
20 history analysis models the hazard rate, which is the likelihood that a merger deal will be divested,
21
22 given that the divestiture has not occurred before t (Allison, 1999; Richards, 1929). To obtain an
23
24 initial understanding of how merger disruption is associated with pre-merger alliance experience,
25
26 we first used the Kaplan-Meier method to estimate the proportions experiencing a divestiture both
27
28 for mergers that were preceded by an alliance and those that were not (Allison, 1995). That is, we
29
30 contrasted the "treatment group" (mergers with pre-merger alliances) with the "control group"
31
32 (those without pre-merger alliances) to compare the likelihood of divesting across these groups of
33
34 firms. This initial bivariate analysis was based on the full sample of 151,540 merger deals.

35
36
37 We next estimated multivariate continuous-time survival models that account for several
38
39 control variables, with the subsample including only mergers between publicly listed firms. We ran
40
41 both a Cox proportional hazards model and a piecewise exponential hazard model, the two most
42
43 widely used semiparametric event history models (Blossfeld, Golsch, & Rohwer, 2007). For both
44
45 the Cox model and piecewise exponential model, we clustered observations based on acquirers'
46
47 industry to avoid autocorrelation (Wooldridge, 2002). The robust-clustered standard error
48
49 calculation, which is a generalization of the sandwich method of calculating heteroskedasticity-
50
51 robust standard errors (Baum, Nichols, & Schaffer, 2010), also helps address concerns about
52
53
54
55
56
57

1
2 industry-level heteroscedasticity.
3

4 **RESULTS**

5
6
7 Table 1 shows the descriptive statistics and correlation coefficients of the variables. Looking
8
9 at divestiture activity in the full sample over time, by the end of the 10th year (3,650 days), 9.7% of
10
11 mergers were divested. By the end of the 20th year (7,300 days), 12.8% of mergers were divested.
12
13 Figure 1 separates the Kaplan-Meier survivor function between mergers that were preceded by an
14
15 alliance and those that were not.⁵ The figure illustrates that a noticeable disparity exists in the risk
16
17 of merger disruption depending on whether or not the firms were previously engaged in an alliance.
18
19 By the end of the 10th year, 5.7% of mergers among firms that were previously engaged in an
20
21 alliance were divested, compared to 9.7% among mergers without pre-merger alliance. To conduct
22
23 a formal test for the equality of survivor functions across the two groups, we applied two types of
24
25 nonparametric tests: a log-rank test and a Wilcoxon test (Cleves, Gould, Gutierrez, & Marchenko,
26
27 2008). Both produced a significant chi-squared value (6.97 and 6.38, respectively), rejecting the
28
29 null that the survivor functions of the two groups are the same ($p < 0.05$).
30
31
32
33

34
35 Insert Table 1 and Figure 1 About Here
36
37

38 Table 2 summarizes the results of the multivariate event-history analyses. Model 1 of Table
39
40 2 shows the results of the Cox model, and Model 2 of Table 2 presents the estimation results of the
41
42 piecewise exponential model. In the first column of each model, we report odds ratios, which
43
44 represent the proportional change in hazard rate from a one-unit increase in the independent
45
46 variable (Allison, 1999; Richards, 1929). The second column of each model reports z-scores
47
48 calculated with robust-clustered standard errors. We include z-scores to facilitate interpretation of
49
50 the direction of effects—i.e., either increasing or decreasing the hazard rate.
51
52
53

54
55 ⁵ Note that starting out with bivariate analyses that do not include control variables affords the ability to capture the
56
57 selection argument suggested by the cohabitation literature, whereby different types of actors (here: organizations) self-
58
59 select into different types of governance modes.
60

Insert Table 2 About Here

According to the Cox model results reported in Model 1 of Table 2, the odds ratio of pre-merger alliance is 0.23 ($z = -7.28, p < 0.001$), indicating that the existence of a pre-merger alliance between the merger partners is significantly and negatively related to the likelihood of post-merger divestiture. This finding was confirmed by the piecewise exponential hazard mode reported in Model 2 (odds ratio = 0.23, $z = -7.27, p < 0.001$),⁶ suggesting that merger deals between firms that had prior alliance experience are 77% less likely to encounter post-merger divestiture than otherwise.

Regarding the control variables, we found divestitures more likely to occur with increasing performance of the acquirers (odds ratio = 1.06, $z = 2.43, p < 0.05$). The combined asset scale of the merger partners is related to a reduced likelihood of post-merger divestiture (odds ratio = 0.99, $z = -6.05, p < 0.001$), but the imbalance of their asset sizes will increase such hazard (odds ratio = 1.00, $z = 2.16, p < 0.05$). Also, diversified mergers between firms in different industries are more likely to encounter divestiture (odds ratio = 1.12, $z = 7.87, p < 0.001$). In addition, the geographic distance between merger partners is negatively related to the likelihood of post-merger divestiture (odds ratio = 0.98, $z = -2.08, p < 0.05$).

POST-HOC ANALYSES

To further explore potential mechanisms underlying the observed effect, we conducted two sets of post-hoc analyses. In the first set, we created more nuanced dependent variables that separate between two forms of divestiture: those that involve a loss of majority control (what SDC codes as “divestiture”) and those that did not involve such a loss of majority control (what SDC codes as either “spin-offs” or “carve-outs”). These two types of divestitures have been suggested to feature

⁶ We also reproduced our model with Firth logit regression (*firthlogit* in *Stata 14*), a technique widely used in testing rare events. Results largely confirmed the findings of our main analyses.

1
2 notable differences. Villalonga and McGahan (2005, p. 1203) emphasize that “spin-offs and
3 carveouts are (...) more integrative than divestitures proper” in that they do not entirely cut off all
4 connections between the parent and the divested unit. Although they introduce an organizational
5 “satellite” structure, in spin-offs and carve-outs, the parent continues to hold a stake in the new firm
6 (Brauer, 2006). Based on the embeddedness logic, it would appear plausible that pre-merger
7 alliances would be more associated with spin-off/carve-out type divestitures than with majority-loss
8 divestitures.
9

10
11 To explore this position, we ran Cox event-history analyses using these two new, more
12 nuanced divestiture measures as dependent variables.⁷ Model 1 in Table 3 shows the results for
13 majority-loss divestitures and Model 2 for spin-offs/carve-outs. In line with our earlier results, the
14 existence of a pre-merger alliance is significantly and negatively related to the likelihood of a
15 majority-loss divestiture (odds ratio = 0.17, $z = -7.28$, $p < 0.001$), reducing the likelihood of
16 majority-loss divestiture by 83%. In contrast, a pre-merger alliance is positively related to the
17 likelihood of a spin-off/carve-out divestiture (odds ratio = 12.00, $z = 5.62$, $p < 0.001$); that is, the
18 merger is 11 times more likely to be spun-off/carved-out than otherwise. We return to these results
19 in our Discussion section.
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38

39
40

Insert Table 3 About Here

41
42 In our second set of post-hoc analyses,⁸ we zoomed in on the subsample of those 278
43 mergers that were preceded by a pre-merger alliance in order to examine the effects of four key
44 alliance characteristics on divestiture likelihood: alliance age (measured by the number of days the
45 alliance lasted before the merger took place), the number of partners involved in the alliance
46
47
48
49
50
51
52

53
54

⁷ Given the small sample sizes of these subgroup analyses, results should be treated with caution, and future research
55 can benefit from further examining these effects with enlarged samples and in various contexts.

56 ⁸ This second set of post-hoc analyses went back to treating the dependent variable of divestiture as a unified concept,
57 given that the sample size was too small to slice the sample both by alliance type and by divestiture type.
58
59
60

1
2
3 (measured as a count), technology versus non-technology alliance (1 for alliances including R&D
4 activities and 0 otherwise), and equity versus non-equity alliance (1 for alliances including equity
5 arrangements and 0 otherwise). First, prior research pointed to a positive effect of alliance maturity
6 on both the acquisition of partner information (Doz, 1996) and the development of trust (Vanneste,
7 Puranam, & Kretschmer, 2014)—the key mechanisms underlying our theorizing for a negative
8 effect of pre-merger alliances on divestiture likelihood. Conversely, we expect that “trial run”
9 alliances (which can be expected to be of shorter duration) do not make the most robust mergers.
10 Moreover, the more partners involved in an alliance, the more difficult it is to exchange fine-grained
11 information and develop trust in a dyad (Li, Eden, Hitt, Ireland, & Garrett, 2012). Further,
12 technology (as opposed to non-technology) alliances can present hurdles for the free flow of
13 information and the formation of trust among partners (Casciaro, 2003). Finally, governing alliances
14 through equity can inhibit information transfer and trust formation between alliance partners (Das &
15 Teng, 1998). Therefore, we expected these four alliance characteristics to predict divestiture
16 likelihood and provide further evidence for the important role that information flows and trust play
17 in this context.

18
19 Because we only focused on those 278 mergers associated with pre-merger alliances in this
20 analysis, it was necessary to address a potential sample-selection bias. Following prior studies, we
21 applied Heckman’s selection model (Heckman, 1979), calculating the inversed Mills ratio and using
22 it to control for the possible sample-selection bias. In the first stage, we formulated a probit model
23 to estimate the probability for a merger to be preceded by a pre-merger alliance using all control
24 variables in our main analyses (see Table 2) and an instrumental variable—the age difference
25 between the acquirer and the target. Then, we calculated the inversed Mills ratio as follows:

$$26 \quad \text{Inverse Mills ratio}_i = \frac{\phi(p_i)}{\Phi(p_i)}$$

27 where p_i refers to the probability of a pre-merger alliance existing, estimated from the probit model

1
2
3 in the first step; $\phi(p_i)$ refers to the normal density of p_i ,; and $\Phi(p_i)$ refers to the standard cumulative
4
5 normal distribution of p_i . We then used the inverse Mills ratio as a control variable, along with all
6
7 other control variables used in the main analysis, as well as the four alliance characteristics
8
9 discussed above.

10
11
12 Table 4 summarizes the results of this analysis. The age of the pre-merger alliance is
13
14 negatively related to the likelihood of post-merger divestiture (odds ratio = 0.99, $z = -2.30$, $p < 0.05$),
15
16 such that 1 year of pre-merger alliance experience can reduce the likelihood of divestiture by 1%. In
17
18 contrast, the divestiture hazard increases with the number of partners in the pre-merger alliance
19
20 (odds ratio = 1.25, $z = 3.23$, $p < 0.01$), with one more alliance partner increasing the post-merger
21
22 divestiture risk by 25%. Also, both technology pre-merger alliances (odds ratio = 2.65, $z = 2.39$,
23
24 $p < 0.05$) and equity-based pre-merger alliances (odds ratio = 2.84, $z = 2.14$, $p < 0.05$) are
25
26 associated with higher divestiture risk. That is, technology alliances are 1.65 times more likely to
27
28 lead to post-merger divestiture than non-technology alliances, while equity-based alliances are 1.84
29
30 times more likely to lead to post-merger divestiture than non-equity alliances.
31
32
33

34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Insert Table 4 About Here

DISCUSSION

41 In this research, we explore how an organization's prior history of governance mode
42 decisions informs its future choices. More specifically, we focus on whether a previous alliance
43 between two organizations is related to the likelihood of a subsequent merger between these
44 organizations being divested. Adding empirical insight into this issue can significantly enhance our
45 understanding of the poorly-understood phenomenon of governance-mode crossing
46 interorganizational trajectories.

54 Two distinct streams of literature led to opposing positions regarding the potential link

1
2
3 between pre-merger alliances and divestiture likelihood. First, research in demography has shown
4
5 on an interpersonal level that premarital cohabitation is positively associated with the likelihood of
6
7 subsequent divorce. Two mechanisms could explain such an association: a selection and a process
8
9 mechanism. Applying these arguments to the organizational level, a specific type of organization
10
11 could get selected into pre-merger alliances and the characteristics of such organizations, such as
12
13 their greater flexibility of boundaries, may subsequently increase the likelihood of merger
14
15 divestiture. Additionally, the process of going through a pre-merger alliance may affect the attitude
16
17 towards the relationship as being flexible and also open to future adaptations such as divestiture.
18
19 According to this view, one would expect pre-merger alliances to be associated with an increased
20
21 likelihood of divestiture. Conversely, embeddedness theory suggests that prior alliances may enable
22
23 the organizations to acquire superior information about each other and to build interorganizational
24
25 trust. This fine-grained information and interorganizational trust, in turn, may facilitate an effective
26
27 evaluation of fit for a potential merger, a smooth merger integration process, as well as the
28
29 development of long-term relationship commitment. As such, pre-merger alliances may be linked to
30
31 a reduced likelihood of later divestiture.
32
33
34
35
36

37 We examined these ideas using large-scale alliance, merger, and divestiture data on US
38
39 firms and employing event history analysis. The key finding is that the relationship between
40
41 pre-merger alliances and divestiture likelihood is negative. That is, mergers that were preceded by
42
43 an alliance face significantly lower divestiture hazard rates than mergers between partners without
44
45 such prior alliance experience. This result provides strong support for the applicability of
46
47 embeddedness theory to cross-type interorganizational relationships, suggesting that informational
48
49 and trust-related benefits from pre-merger alliances outweigh any potential selection or process
50
51 aspects that may positively affect divestiture likelihood. An interorganizational relationship that is
52
53 deeply embedded in prior alliance interactions appears to be significantly less likely to be dissolved
54
55
56
57
58
59
60

1
2
3 once it has advanced into a merger.

4
5 We explored potentially relevant mechanisms underlying the observed main effect in two
6
7 sets of post-hoc analyses, which turned out to lend further credibility to the embeddedness story.
8
9 First, we separated between majority-loss and less abrupt forms of divestitures (i.e., spin-offs and
10
11 carve-offs). Interestingly, we found pre-merger alliances to be strongly negatively related to the
12
13 former but positively associated with the latter. We can speculate that, when post-merger
14
15 restructuring becomes necessary, the information benefits and the trust developed in pre-merger
16
17 alliances may lead firms to shy away from full separations and instead continue to maintain formal
18
19 and informal exchanges, which remain common in spin-offs and carve-outs (Brauer, 2006). The
20
21 second set of post-hoc analyses probed whether certain characteristics of the pre-merger alliance
22
23 may be associated with systematic differences in divestiture likelihood. Results revealed that the
24
25 divestiture hazard was particularly ameliorated when the pre-merger alliance (1) had a long duration
26
27 (rather than was quickly replaced by the merger), (2) was bilateral (rather than multilateral), (3) had
28
29 a non-technology focus, and (4) was non-equity based. Prior research associates these four alliance
30
31 characteristics with improved access to partner information and the development of trust between
32
33 alliance partners, both of which may explain the pronounced reduction in divestiture likelihood.
34
35
36
37
38

39
40 Overall, the results of this study provide further support for the central tenets of
41
42 embeddedness theory: Organizations face substantial uncertainties associated with the
43
44 competencies, needs, and reliability of (potential) exchange partners (Stinchcombe, 1990). In order
45
46 to reduce their search costs and to alleviate the risk of opportunistic partners, organizations tend to
47
48 create enduring relationships with specific organizations they had prior experience with (Dore,
49
50 1983; Powell, 1990; Rogan, 2014).
51
52

53
54 While on the one hand confirming existing theory, the results of this study also indicate the
55
56 need to broaden the embeddedness perspective. Whereas Uzzi (1997) stresses that an organization's
57
58
59
60

1
2
3 types of ties have important implications for its embeddedness, the current research suggests that it
4 is also important to differentiate between distinct kinds of exclusive ties, such as alliances, mergers,
5 and divestitures. By simultaneously considering these different alternatives, it is possible to provide a
6 richer picture of how organizations change their boundaries, taking into account that embeddedness of
7 organizational boundary decisions may also operate across alternative governance choices.
8
9
10
11
12
13

14 On a more general level, such arguments resonate with recent criticism of network studies
15 (Grannis, 2010; Zuckerman, 2010). Researchers must find a way to deal with the fact that there are
16 multiple types of ties that produce networks and avoid commensuration (Espeland & Stevens, 1998)
17 whereby particular features of the dyads are eliminated and all links are rendered identical.
18
19
20
21
22

23 Distinctions in how relations are defined need to be explicitly taken into account in order to prevent
24 misspecification of network phenomena. At the same time, only focusing on one specific type of tie
25 while disregarding others that may be meaningful in the specific context leads to the loss of
26 valuable information. As such, particular attention should be devoted to an integrated, and
27 preferably longitudinal, analysis across different tie types, as was attempted in the current study.
28
29
30
31
32
33

34 Besides contributing to research on embeddedness and organizational boundaries, this study
35 also adds to the strategic management literature on the antecedents to divestiture decisions (e.g.,
36 Brauer, 2006; Dickler & Bausch, 2016; Hoskisson, Johnson, & Moesel, 1994). Divestitures are
37 often accompanied by substantial losses (Kaplan & Weisbach, 1992), and thus managers would
38 benefit from knowing what factors are associated with divestiture likelihood. Our research has
39 identified a new aspect relevant to divestiture likelihood: whether or not the merger was preceded
40 by an alliance between the two organizations. The results are supportive of the notion that
41 pre-merger alliances provide valuable platforms for learning about the partner as well as for
42 developing mutual trust, both of which can aid in making a subsequent merger work. Thus, our
43 study affords a fuller appreciation of the interrelationships between types of initiatives that can
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 shift an organization's boundaries.

4
5 Similarly, our paper speaks to the extensive literature addressing the alliance vs. merger
6
7 decision (e.g., Dyer et al., 2004; Yin & Shanley, 2008). Our findings suggest that this literature
8
9 would benefit from theorizing dedicated to the dynamics among governance choices (also see Shi,
10
11 Sun, & Prescott, 2012). In other words, the binary decision of whether to ally or merge should be
12
13 revised in order to allow for a third option of "ally and *then* merge."
14
15

16
17 This insight resonates with the emerging literature on sequential strategy moves, which has
18
19 challenged more static approaches to corporate strategy research by making the point that strategy
20
21 choices tend to be temporally interdependent (e.g., Bennett & Feldman, 2017; Karim & Mitchell,
22
23 2000; Vidal & Mitchell, 2018). This literature has shown how certain strategy decisions can either
24
25 free up or consume firm resources and/or either broaden or focus the firm's scope, both of which
26
27 can shape the availability and advantageousness of strategy options in subsequent time periods. Our
28
29 investigation augments these resource and scope arguments with an understanding of how relational
30
31 arguments may play a role in driving sequential strategy. Specifically, whether or not firms form a
32
33 pre-merger alliance can lead to variations in dyadic information and trust, which in turn can shape
34
35 the later decision of whether or not to divest.
36
37
38

39
40 Moving forward, research investigating additional contingencies and mechanisms of the pre-
41
42 merger alliance-divestiture link would be valuable. In alternative empirical settings, the
43
44 consequences of embeddedness have been found to depend on the specific type of actors (Burt,
45
46 1997) and the time period under investigation (Mizruchi, Stearns, & Marquis, 2006). Building on
47
48 these insights, future research may choose to focus on whether the link between pre-merger
49
50 alliances and divestitures is contingent on specific organizational characteristics or shifts in the
51
52 institutional environment that may occur over time. Further, pre-merger alliances are of course only
53
54 one form of interorganizational contact that can have important implications for subsequent merger
55
56
57
58
59
60

1
2 stability. Therefore, future research should test our extended embeddedness perspective in the
3
4 context of other forms of contact beyond pre-merger alliances. For instance, industry associations
5
6 and executive mobility appear to be relevant pre-merger linkages that may facilitate information
7
8 transfer and build trust among merger partners, in turn possibly affecting merger stability.
9

10 11 **CONCLUSION**

12
13
14 In the study of organizational boundary decisions, traditional approaches focus on static efficiency
15
16 considerations, arguing that organizations reconfiguring their relations with the environment will
17
18 choose the governance alternative that minimizes transaction costs. While such an explanation is
19
20 often plausible, it may ignore that organizational decisions—including those on how to draw
21
22 boundaries—are socially embedded in ongoing social relationships. As such, research in
23
24 organizational theory is increasingly interested in the embeddedness of organizational governance
25
26 mode decisions. However, previous studies often do not account for the multifaceted nature of these
27
28 choices but focus on only one governance alternative at a time. This article redresses this deficit by
29
30 arguing that governance decisions are socially embedded not just within, but across different
31
32 governance modes. Focusing on the trajectory involving alliance, merger, and divestiture as three
33
34 consecutive alternatives for governing a relationship between two organizations, we drew on two
35
36 distinct literatures to derive opposing positions on the relationship between pre-merger alliances and
37
38 divestiture likelihood. The empirical results suggest that a pre-merger alliance with another
39
40 organization are associated with a decreased likelihood of subsequent divestiture of that
41
42 organization. This finding underlines the merits of simultaneously considering multiple types of ties
43
44 when analyzing issues related to economic embeddedness.
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 **TABLES AND FIGURES**
4
5
6

7 **Table 1 Descriptive statistics**
8

9

10	Variable	Mean	S.D.	1	2	3	4	5	6	7
11	1. Post-merger divestiture	0.67	0.47	1.00						
12	2. Pre-merger alliance	0.02	0.14	-0.18	1.00					
13	3. Acquirer ROA	0.75	0.75	0.05	0.00	1.00				
14	4. Acquirer leverage ratio	144.61	3,240.96	-0.02	-0.01	-0.03	1.00			
15	5. Combined size of acquirer and target	0.68	2.51	0.07	-0.02	-0.17	0.01	1.00		
16	6. Acquirer-target size imbalance	783.10	2,570.67	0.01	0.00	-0.02	0.00	0.05	1.00	
17	7. Acquirer-target industry distance	1.86	1.71	0.28	0.00	0.07	-0.02	0.09	0.01	1.00
18	8. Acquirer-target geographic distance	2.31	1.19	-0.01	0.00	0.01	0.01	-0.01	0.00	0.02
19										
20										
21										
22										

23
24 *Notes:* n = 11,324. Correlations with absolute value of 0.02 or greater significant at 5%-level.
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Table 2 Multivariate survival analyses

DV: divestiture	Model 1 Cox model		Model 2 Piecewise exponential model	
	Hazard ratio. (Robust SD)	z-value	Hazard ratio. (Robust SD)	z-value
Pre-merger alliance	0.23 (0.05)	-7.28***	0.23 (0.05)	-7.27***
Acquirer ROA	1.06 (0.03)	2.43*	1.06 (0.03)	2.42*
Acquirer leverage ratio	0.99 (0.01)	-1.36	0.99 (0.01)	-1.36
Combined size of acquirer and target	0.99 (0.00)	-6.05***	0.99 (0.00)	-6.03***
Acquirer-target size imbalance	1.00 (0.00)	2.16*	1.00 (0.00)	2.17*
Acquirer-target industry distance	1.12 (0.02)	7.87***	1.12 (0.02)	7.89***
Acquirer-target geographic distance	0.98 (0.01)	-2.08*	0.98 (0.01)	-2.09*
Years	Controlled		Controlled	
Wald chi-square	145.40***		116.24***	

Notes:

- a. The hazard rate of divestiture is the dependent variable. Odds ratios are interpreted as the proportional change in hazard rate from a one-unit increase in the independent variable. 1 indicates no change. Odds ratios lower than 1 indicate that increases in independent variables decrease the hazard rate, and those greater than 1 indicate that increases in independent variables increase the hazard rate.
- b. $n = 11,324$
- c. † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
- d. Both models were calculated with robust-adjusted standard deviation clustered on acquirers' industry.

Table 3 Contrast between majority-loss divestiture and spin-off/carve-out

Variables	Model 1 Majority-loss divestiture		Model 2 Spin-off/Carve-out	
	Hazard ratio. (Robust SD)	z-value	Hazard ratio. (Robust SD)	z-value
Pre-merger alliance	0.17 (0.04)	-7.28***	12.00 (5.31)	5.62***
Acquirer ROA	1.06 (0.03)	2.38*	1.24 (0.16)	1.72†
Acquirer leverage ratio	0.99 (0.01)	-1.36	0.98 (0.05)	-0.41
Combined size of acquirer and target	0.99 (0.00)	-6.10***	0.99 (0.00)	-0.16
Acquirer-target size imbalance	1.00 (0.00)	2.22*	0.99 (0.00)	-1.05
Acquirer-target industry distance	1.12 (0.02)	7.78***	0.86 (0.10)	-1.26
Acquirer-target geographic distance	0.98 (0.01)	-2.05*	0.94 (0.13)	-0.44
Years	Controlled		Controlled	
Wald chi-square	116.32***		48.76***	

Notes:

- a. For Model 1, the dependent variable is the hazard rate of divestiture. For Model 2, the dependent variable is the hazard ratio of spin-off or carve-out. Odds ratios are interpreted as the proportional change in hazard rate from a one-unit increase in the independent variable. 1 indicates no change. Odds ratios lower than 1 indicate that increases in independent variables decrease the hazard rate, and those greater than 1 indicate that increases in independent variables increase the hazard rate.
- b. n = 11,324
- c. †p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001
- d. Both models were calculated with robust-adjusted standard deviation clustered on acquirers' industry.

Table 4 Multivariate survival analyses

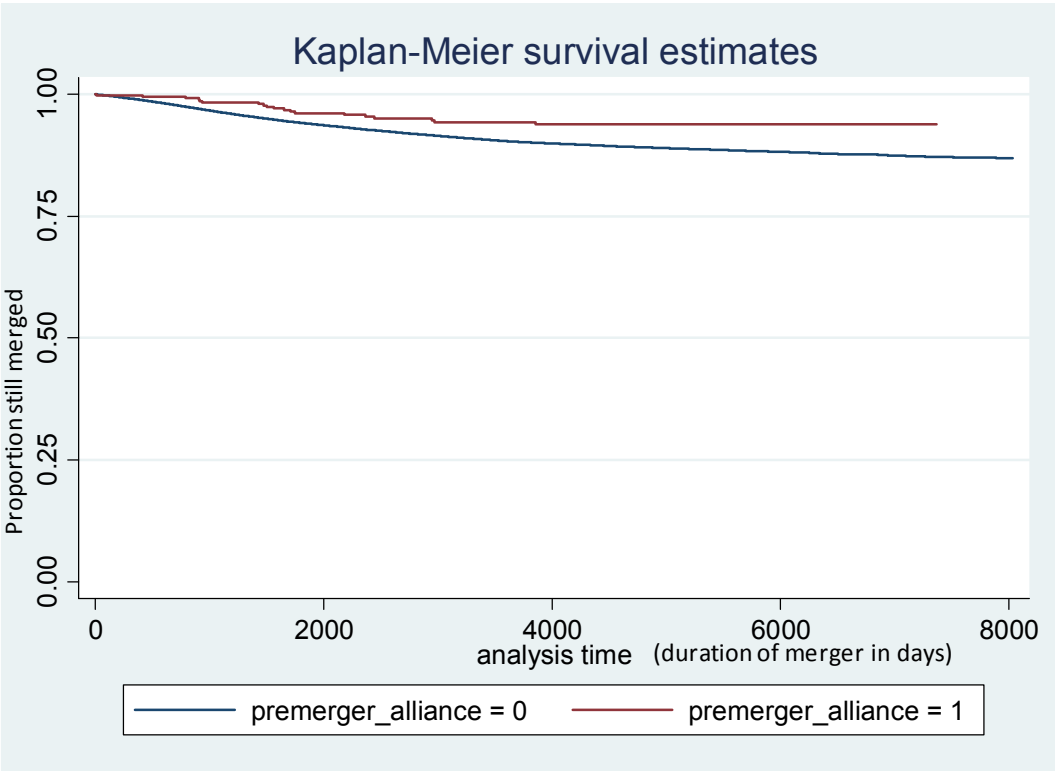
Variables	Divestiture	
	Hazard ratio. (Robust SD)	z-value
Alliance age	0.99 (0.00)	-2.30*
Number of alliance partners	1.25 (0.09)	3.23**
Technology alliance	2.65 (1.08)	2.39*
Equity alliance	2.84 (1.38)	2.14*
Acquirer ROA	1.14 (0.46)	0.32
Acquirer leverage ratio	1.35 (0.86)	0.46
Combined size of acquirer and target	0.99 (0.00)	-1.54
Acquirer-target size imbalance	0.99 (0.00)	-1.39
Acquirer-target industry distance	1.19 (0.14)	1.51
Acquirer-target geographic distance	0.89 (0.14)	-0.73
Inverse Mills ratio	1.00 (0.00)	0.12
Years	Controlled	
Wald chi-square	56.65***	

Notes:

- a. The hazard rate of divestiture is the dependent variable. Odds ratios are interpreted as the proportional change in hazard rate from a one-unit increase in the independent variable. 1 indicates no change. Odds ratios lower than 1 indicate that increases in independent variables decrease the hazard rate, and those greater than 1 indicate that increases in independent variables increase the hazard rate.
- b. $n = 278$
- c. † $p < 0.10$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
- d. The model calculated with robust-adjusted standard deviation clustered on acquirers' industry.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Figure 1. Survival curves for mergers—by pre-merger alliance activity



REFERENCES

- Ahuja, G. 2000. Collaboration networks, structural holes, and innovation: A longitudinal study. *Administrative Science Quarterly*, 45(3): 425-455.
- Allison, P. D. 1995. *Survival analysis using the SAS system: A practical guide*. Cary, NC: SAS Institute.
- Allison, P. D. 1999. *Logistic regression using SAS: Theory and applications*. Carey, NC: SAS Publishing.
- Anand, B. N., & Khanna, T. 2000. Do firms learn to create value? The case of alliances. *Strategic Management Journal*, 21(3): 295-315.
- Baum, C. F., Nichols, A., & Schaffer, M. E. 2010. Evaluating one-way and two-way cluster-robust covariance matrix estimates, *BOS10 Stata Conference*. Boston, MA: Stata Users Group.
- Bennett, N. G., Blanc, A. K., & Bloom, D. E. 1988. Commitment and the modern union: Assessing the link between premarital cohabitation and subsequent marital stability. *American Sociological Review*, 53(1): 127-138.
- Bennett, V. M., & Feldman, E. R. 2017. Make room! Make room! A note on sequential spinoffs and acquisitions. *Strategy Science*, 2(2): 100-110.
- Bergh, D. D. 1997. Predicting divestiture of unrelated acquisitions: An integrative model of ex ante conditions. *Strategic Management Journal*, 18(9): 715-731.
- Bleeke, J., & Ernst, D. 1991. The way to win in cross-border alliances. *Harvard Business Review*, 69(6): 127-135.
- Blossfeld, H.-P., Golsch, K., & Rohwer, G. 2007. *Event history analysis with Stata*. Mahwah, NJ: Erlbaum Associates.
- Brauer, M. 2006. What have we acquired and what should we acquire in divestiture research? A review and research agenda. *Journal of Management*, 32(6): 751-785.

- 1
2 Brauer, M., Mammen, J., & Luger, J. 2017. Sell-offs and firm performance: A matter of
3
4 experience? *Journal of Management*, 43(5): 1359-1387.
5
6
7 Burt, R. S. 1997. The contingent value of social capital. *Administrative Science Quarterly*, 42(2):
8
9 339-365.
10
11 Capron, L., Mitchell, W., & Swaminathan, A. 2001. Asset divestiture following horizontal
12
13 acquisitions: A dynamic view. *Strategic Management Journal*, 22(9): 817-844.
14
15
16 Cartwright, S., & Cooper, C. L. 1993. Of mergers, marriage, and divorce. *Journal of Managerial*
17
18 *Psychology*, 8(6): 7-10.
19
20
21 Casciaro, T. 2003. Determinants of governance structure in alliances: The role of strategic, task and
22
23 partner uncertainties *Industrial and Corporate Change*, 12(6): 1223-1251.
24
25
26 Chang, S. J. 1996. An evolutionary perspective on diversification and corporate restructuring:
27
28 Entry, exit, and economic performance during 1981-89. *Strategic Management Journal*,
29
30 17(8): 587-611.
31
32
33 Cleves, M., Gould, W. W., Gutierrez, R. G., & Marchenko, Y. U. 2008. *An introduction to survival*
34
35 *analysis using Stata* (2 ed.). College Station, TX: Stata Press.
36
37
38 Coase, R. H. 1937. The nature of the firm. *Economica*, 4(16): 386-405.
39
40
41 Das, T. K., & Teng, B.-S. 1998. Between trust and control: Developing confidence in partner
42
43 cooperation in alliances. *Academy of Management Review*, 23(3): 491-512.
44
45
46 DePamphilis, D. M. 2010. *Mergers, acquisitions, and other restructuring activities: An integrated*
47
48 *approach to process, tools, cases, and solutions* (5 ed.). Burlington, MA: Academic Press.
49
50
51 Dickler, T. A., & Bausch, A. 2016. What do we really know about the antecedents of divestitures?
52
53 A meta-analytic review. *Academy of Management Proceedings*.
54
55
56 Dodgson, M. 1993. Learning, trust, and technological collaboration. *Human Relations*, 46(1): 77-
57
58 95.
59
60

- 1
2
3 Dore, R. 1983. Goodwill and the spirit of market capitalism. *British Journal of Sociology*, 34(4):
4
5 459-482.
6
7 Doz, Y. L. 1996. The evolution of cooperation in strategic alliances: Initial conditions or learning
8
9 processes? *Strategic Management Journal*, 17(7): 55-78.
10
11 Dyer, J. H., Kale, P., & Singh, H. 2004. When to ally and when to acquire. *Harvard Business*
12
13 *Review*, 82(7/8): 108-115.
14
15
16 Espeland, W. N., & Stevens, M. L. 1998. Commensuration as a social process. *Annual Review of*
17
18 *Sociology*, 24(1): 313-343.
19
20
21 Etheridge, L. S. 1991. Relationship-building as a basis for security, *Discussion notes prepared for*
22
23 *the working group meeting on Redefining Security, Yale University*.
24
25
26 Fiol, C. M. 1989. A semiotic analysis of corporate language: Organizational boundaries and joint
27
28 venturing *Administrative Science Quarterly*, 34(2): 277-303.
29
30
31 Garette, B., & Dussauge, P. 2000. Alliances versus acquisitions: Choosing the right option.
32
33 *European Management Journal*, 18(1): 63-69.
34
35
36 Grannis, R. 2010. Six degrees of "who cares?". *American Journal of Sociology*, 115 (4): 991-1017.
37
38
39 Granovetter, M. 1985. Economic action and social structure: The problem of embeddedness.
40
41 *American Journal of Sociology*, 91(3): 481-510.
42
43
44 Gulati, R. 1995. Social structure and alliance formation patterns: A longitudinal analysis.
45
46 *Administrative Science Quarterly*, 40(4): 619-652.
47
48
49 Gulati, R., & Gargiulo, M. 1999. Where do interorganizational networks come from? *American*
50
51 *Journal of Sociology*, 104(5): 1439-1493.
52
53
54 Healy, P. M., Palepu, K. G., & Ruback, R. S. 1992. Does corporate performance improve after
55
56 mergers? *Journal of Financial Economics*, 31(2): 135-175.
57
58
59 Heckman, J. J. 1979. Sample selection bias as a specification error. *Econometrica*, 47(1): 153-161.
60

- 1
2
3 Helfat, C. E., & Eisenhardt, K. M. 2004. Inter-temporal economies of scope, organizational
4
5
6 modularity, and the dynamics of diversification. *Strategic Management Journal*, 25(13):
7
8 1217-1232.
9
- 10 Hitt, M. A., King, D., Krishnan, H., Makri, M., Schijven, M., Shimizu, K., & Zhu, H. 2009.
11
12 Mergers and acquisitions: Overcoming pitfalls, building synergy, and creating value.
13
14 *Business Horizons*, 52(6): 523-529.
15
- 16
17 Hoskisson, R. E., Johnson, R. A., & Moesel, D. D. 1994. Corporate divestiture intensity in
18
19 restructuring firms: Effects of governance, strategy, and performance. *Academy of*
20
21 *Management Journal*, 37(5): 1207-1251.
22
23
- 24 Ingram, P., Robinson, J., & Busch, Marc L. 2005. The intergovernmental network of world trade:
25
26 Igo connectedness, governance, and embeddedness. *American Journal of Sociology*,
27
28 111(3): 824-858.
29
30
- 31 Kaplan, S. N., & Weisbach, M. S. 1992. The success of acquisitions: Evidence from divestitures.
32
33 *Journal of Finance*, 47(1): 107-138.
34
35
- 36 Karim, S., & Mitchell, W. 2000. Path-dependent and path-breaking change: Reconfiguring business
37
38 resources following acquisitions in the US medical sector, 1978-1995. *Strategic*
39
40 *Management Journal*, 21(10/11): 1061-1081.
41
42
- 43 Lajoux, A. R. 2006. *The art of M&A integration: A guide to merging resources, processes, and*
44
45 *responsibilities* (2 ed.). New York, NY: McGraw-Hill.
46
- 47 Lee, L. F., & Walsh, J. P. (2014). Moneymaking dealmakers: Rewarding dynamic managerial
48
49 capabilities or narcissistic displays of power? Retrieved from
50
51 <http://jamespwalsh.com/Resources/Lee and Walsh - May 1 2014.pdf>
52
53
54
55
56
57
58
59
60

- 1
2
3 Levinson, H. 1970. A psychologist diagnoses merger failures. *Harvard Business Review*, 44(2):
4
5 139-147.
6
- 7 Li, D., Eden, L., Hitt, M. A., Ireland, R. D., & Garrett, R. P. 2012. Governance in multilateral r&d
8
9 alliances. *Organization Science*, 23(4): 1191-1210.
10
- 11 Mayer, R. C., Davis, J. H., & Schoorman, F. D. 1995. An integrative model of organizational trust.
12
13 *Academy of Management Review*, 20(3): 709-734.
14
15
- 16 Mizruchi, M. S., Stearns, L. B., & Marquis, C. 2006. The conditional nature of embeddedness: A
17
18 study of borrowing by large US firms, 1973-1994. *American Sociological Review*, 71(2):
19
20 310-333.
21
22
- 23 Penrose, E. T. 1959. *The theory of the growth of the firm*. New York, NY: Wiley.
24
- 25 Pfeffer, J. 1972. Merger as a response to organizational interdependence. *Administrative Science*
26
27 *Quarterly*, 17(3): 382-394.
28
29
- 30 Phillips, J. A., & Sweeney, M. M. 2005. Premarital cohabitation and marital disruption among
31
32 white, black, and mexican American women. *Journal of Marriage and Family*, 67(2): 296-
33
34 314.
35
36
- 37 Porter, M. E. 1987. From competitive advantage to corporate strategy. *Harvard Business Review*,
38
39 65(3): 43-59.
40
- 41 Powell, W. W. 1990. Neither market nor hierarchy: Network forms of organization. *Research in*
42
43 *Organizational Behavior*, 12: 295-336.
44
45
- 46 Powell, W. W., Koput, K. W., & Smith-Doerr, L. 1996. Interorganizational collaboration and the
47
48 locus of innovation: Networks of learning in biotechnology. *Administrative Science*
49
50 *Quarterly*, 41(1): 116-145.
51
52
- 53 Ratajczak-Mrozek, M. 2017. *Network embeddedness: Examining the effect on business*
54
55 *performance and internationalization*. New York, NY: Palgrave Macmillan.
56
57

- 1
2 Ravenscraft, D. J., & Scherer, F. M. 1987. *Mergers, selloffs and economic efficiency*. Washington,
3 DC: Brookings Institution.
4
5
6
7 Richards, R. D. 1929. *The early history of banking in England*. London: P. S. King & Son, Ltd.
8
9
10 Ring, P. S., & Van De Ven, A. H. 1994. Developmental processes of cooperative
11 interorganizational relationships. *Academy of Management Review*, 19(1): 90-118.
12
13
14 Rogan, M. 2014. Too close for comfort? The effect of embeddedness and competitive overlap on
15 client relationship retention following an acquisition. *Organization Science*, 25(1): 185-203.
16
17
18 Rousseau, D. M., Sitkin, S. B., Burt, R. S., & Camerer, C. 1998. Not so different after all: A cross-
19 discipline view of trust. *Academy of Management Review*, 23(3): 393-404.
20
21
22
23 Santos, F. M., & Eisenhardt, K. M. 2005. Organizational boundaries and theories of organization.
24
25 *Organization Science*, 16(5): 491-508.
26
27
28 Schilke, O., & Cook, K. S. 2013. A cross-level process theory of trust development in
29 interorganizational relationships. *Strategic Organization*, 11(3): 281-303.
30
31
32 Schilke, O., & Cook, K. S. 2015. Sources of alliance partner trustworthiness: Integrating calculative
33 and relational perspectives. *Strategic Management Journal*, 36(2): 276-297.
34
35
36
37 Schilling, M. A. 2009. Understanding the alliance data. *Strategic Management Journal*, 30(3):
38 233-260.
39
40
41 Shenkar, O., & Li, J. 1999. Knowledge search in international cooperative ventures. *Organization*
42 *Science*, 10(2): 134-143.
43
44
45
46 Shi, W., Sun, J., & Prescott, J. E. 2012. A temporal perspective of merger and acquisition and
47 strategic alliance initiatives: Review and future direction. *Journal of Management*, 38(1):
48 164-209.
49
50
51
52
53
54
55
56
57
58
59
60

- 1
2 Shimizu, K. 2007. Prospect theory, behavioral theory, and the threat-rigidity thesis: Combinative
3 effects on organizational decisions to divest formerly acquired units. *Academy of*
4
5
6
7 *Management Journal*, 50(6): 1495-1514.
8
- 9 Singh, P. P. (2011). Can Sony succeed when Sony-Ericsson partnership failed? *BBC News*.
10 Retrieved from <http://www.bbc.com/news/business-15285258>
11
12
13
- 14 Smock, P. J. 2000. Cohabitation in the United States: An appraisal of research themes, findings, and
15 implications. *Annual Review of Sociology*, 26(1): 1-20.
16
17
- 18 Stearns, L. B., & Allan, K. D. 1996. Economic behavior in institutional environments: The
19 corporate merger wave of the 1980s. *American Sociological Review*, 61(4): 699-718.
20
21
22
- 23 Stinchcombe, A. L. 1990. *Information and organization*. Berkeley, CA: University of California
24 Press.
25
26
- 27 Swedberg, R. 1994. Markets as social structures. In N. Smelser, & R. Swedberg (Eds.), *The*
28 *handbook of economic sociology*: 255-282. Princeton, NJ: Princeton University Press.
29
30
- 31 Teachman, J. D., & Polonko, K. A. 1990. Cohabitation and marital stability in the United States
32
33 *Social Forces*, 69(1): 207-220.
34
35
- 36 Teece, D. J., Rumelt, R. P., Dosi, G., & Winter, S. G. 1994. Understanding corporate coherence:
37 Theory and evidence. *Journal of Economic Behavior and Organization*, 23(1): 1-30.
38
39
- 40 Uzzi, B. 1996. The sources and consequences of embeddedness for the economic performance of
41 organizations: The network effect. *American Sociological Review*, 61(4): 674-698.
42
43
44
- 45 Uzzi, B. 1997. Social structure and competition in interfirm networks: The paradox of
46 embeddedness. *Administrative Science Quarterly*, 42(1): 35-67.
47
48
49
- 50 Vanneste, B. S., Puranam, P., & Kretschmer, T. 2014. Trust over time in exchange relationships:
51 Meta-analysis and theory. *Strategic Management Journal*, 35(12): 1891-1902.
52
53
54
55
56
57
58
59
60

- 1
2
3 Vidal, E., & Mitchell, W. 2018. Virtuous or vicious cycles? The role of divestitures as a
4
5 complementary penrose effect within resource-based theory. *Strategic Management*
6
7 *Journal*, 39(1): 131-154.
8
- 9
10 Villalonga, B., & McGahan, A. M. 2005. The choice among acquisitions, alliances, and divestitures.
11
12 *Strategic Management Journal*, 26 (13): 1183-1208.
13
- 14
15 Volberda, H. W. 1996. Toward the flexible form: How to remain vital in hypercompetitive
16
17 environments. *Organization Science*, 7(4): 359-374.
18
- 19
20 Weitz, B. A., & Jap, S. D. 1995. Relationship marketing and distribution channels. *Journal of the*
21
22 *Academy of Marketing Science*, 23(4): 305-320.
23
- 24
25 Williamson, O. E. 1981. The economics of organization: The transaction cost approach. *American*
26
27 *Journal of Sociology*, 87(3): 548-577.
28
- 29
30 Williamson, O. E. 1991. Comparative economic organization: The analysis of discrete structural
31
32 alternatives. *Administrative Science Quarterly*, 36(2): 269-296.
33
- 34
35 Wooldridge, J. M. 2002. *Econometric analysis of cross section and panel data*. Cambridge, MA:
36
37 MIT Press.
38
- 39
40 Yin, X., & Shanley, M. 2008. Industry determinants of the “merger versus alliance” decision.
41
42 *Academy of Management Review*, 33(2): 473-491.
43
- 44
45 Zollo, M., Reuer, J. J., & Singh, H. 2002. Interorganizational routines and performance in strategic
46
47 alliances. *Organization Science*, 13(6): 701-713.
48
- 49
50 Zucker, L. G. 1986. Production of trust: Institutional sources of economic structure, 1840-1920.
51
52 *Research in Organizational Behavior*, 8: 53-111.
53
- 54
55 Zuckerman, E. W. 2000. Focusing the corporate product: Securities analysts and de-diversification.
56
57 *Administrative Science Quarterly*, 45(3): 591-619.
58
59
60

1
2
3 Zuckerman, E. W. 2010. Why social networks are overrated: Downsides of the commensuration
4
5 that underlies social network analysis. *Perspectives: Newsletter of the ASA Theory Section*,
6
7 32(1): 3-5.
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

Author Bios

Oliver Schilke (oschilke@arizona.edu) is an Assistant Professor of Management and Organizations (tenure track) and an Assistant Professor of Sociology (by courtesy) at The University of Arizona. He is primarily interested in organizational theory, and much of his research has examined issues related to routines and trust, often in the context of interorganizational relationships.

Han Jiang (hjiang2@email.arizona.edu) is an Assistant Professor in Strategy and Organization Theory at Eller College of Management, The University of Arizona. His research mainly focuses on the roles of social networks and social capital in the contexts of corporate governance, interorganizational relationships, and entrepreneurship.